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THE DENTAL DIGEST

GEORGE WOOD CLAPP, D.D.S., Editor

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Vol. XX

JUNE, 1914

No. 6

THE TEMPERAMENTAL SELECTION OF ARTIFICIAL TEETH, A FALLACY*

By J. LEON WILLIAMS, D.D.S., L.D.S., LONDON, ENGLAND,
Fellow of the Royal Anthropological Institute of Great Britain and Ireland.

(Fifth Paper, Conclusion.)†

While the improvements in the outline forms and proportions of which I have been speaking are fundamental improvements in the new forms of teeth, because they strike at the very foundation of good prosthesis, it has been possible to incorporate into the anteriors of the new teeth other improvements, some of which have long been asked for by the dental profession. I shall refer to these under the headings of:—

IMPROVED LABIAL SURFACES AND IMPROVED COLORINGS.

Many a dentist who has had difficulty in making a satisfactory restoration of a lost natural tooth, even when the artificial tooth has seemed of the right size, form and color, has been at a loss to account for the difficulty, and has attributed it to the difference in appearance between the natural tooth and the porcelain.

The fact has been that the porcelain tooth reflected the light in a different way than the natural tooth did, because the natural tooth presented a slightly roughened labial surface which diffused the light, while the porcelain tooth presented a smooth surface which did not

* The foregoing pages represent the part of the paper read on December 8, 1913. The succeeding portion was read on March 10, 1914. The substance of the whole paper was given at the annual meeting of the Institute of Dental Pedagogics, Buffalo, N. Y., January 28, 1914.

† These papers were commenced in the February, 1914, DIGEST.

diffuse it. (It should be noted here that some natural teeth have smooth labial surfaces, but they seem to be in the minority, and are not as pleasing in color as those with rougher surfaces.)

If the labial surface of an upper central which is beautiful in color and softness be carefully examined, it will be seen to present very delicate longitudinal striations due to the succession of calcification of the ameloblasts or enamel cells. These striations have a very constant pattern which is horizontally across the labial surface of the tooth, by a series of compound curves. The striations undergo regular changes in form and size in different parts of the tooth.

These striations work very important color effects in the appearance of the teeth. They soften the high lights which would otherwise be reflected with much brilliancy from certain parts of the tooth, and which would often make the teeth a point of too strong light to harmonize well with the rest of the face. They soften the shadows, which would otherwise be too deep. They do this by breaking up the waves of reflected light so that they are not returned to the eye in that rhythmical succession given by polished surfaces. The result is that the whole surface of the tooth is rendered considerably softer than it would otherwise be.

Not only is this surface of the tooth rendered softer, but careful experiments with optical instruments seem to show that the whole outline of the tooth is given a softer appearance by this diffusion of light.

The methods in use for the commercial production of porcelain teeth have not permitted the reproduction of labial surfaces which could diffuse the reflected light in the manner just referred to. We have had strong developmental grooves and occasional cross grooves, possibly intended to represent deficient calcification. Otherwise the labial surfaces have been smooth.

The result of the smoothness of porcelain labial surfaces has been that the light from them has not been diffused and softened. The high lights have been strong and the shadows deep. The outlines have been always clearly defined. And when placed beside natural teeth of even like form and color, they have presented, to the observing eyes, differences which have often made them unsatisfactory. The general comment was that the teeth looked "too glassy."

This matter of diffusing the reflected lights and giving Trubyte teeth more natural appearances has received the most exacting attention, with the result that the labial surfaces of Trubyte teeth present enamel markings which are anatomically correct in form and which soften the reflected high lights and shadows in the same way the natural teeth do.

This softening of the lights and shadows changes the whole appearance of the teeth, so that they seem to be of a different porcelain or texture from similar teeth not so softened.

This improvement, which I have passed over in few words, is of the very greatest value to the prosthetic worker who wishes to render his patient a high type of service and receive a proper fee therefor. When these moulds are produced in facings and crowns, the full force of the improvement will be apparent to all.

The incorporation of these enamel markings, in correct form, has been a task of great difficulty. It has been necessary to perfect a new and improved method of mould making, and this has demanded almost two years of constant labor.

COLOR IN ARTIFICIAL TEETH.

If the knowledge of form in natural and artificial teeth has been in a chaotic condition there has hardly been sufficient scientific knowledge of color in teeth to justify the use of the word "chaotic" or any other adjective concerning it. We have known practically nothing and certainly nothing practical about the right use of color in porcelain teeth.

As time went on and I became more and more absorbed in the study and investigation of tooth form and in the practical working out of the results of my investigation in carving models for the Trubyte System, it became apparent that some one else would have to take up this matter of analyzing the color of different types of natural teeth and adapting the results obtained in this branch of our work to the new system of artificial teeth.

Dr. Clapp kindly offered to take this work off my hands, and he entered upon this very difficult task with the earnestness and determination that he puts into everything that he undertakes.

This work, under his direction, has now been in progress for nearly two years, and the first results are being embodied in the Trubyte system of teeth.

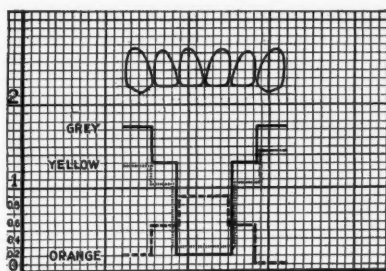
Many progressive dentists here in America and others in Europe had, for years, been calling attention to the unnatural coloration of artificial teeth, but no one had ever suggested any standard of color and no one had ever determined what the actual colors are in human teeth. This, then, was the arduous task Dr. Clapp took upon himself. He had first to determine the actual primary and secondary colors in natural teeth, and he had then to discover or invent a method of standardizing the results of this investigation so as to secure a practical application of the knowledge gained to the coloration of artificial teeth.

He was fortunate at the outset in being able to secure the services

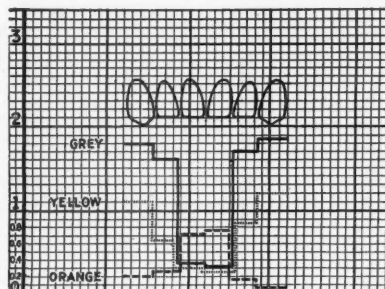
of one of the world's greatest commercial color experts. With his aid, the colors in a large number of sets of natural teeth were carefully analyzed and recorded in exact terms. The secondary and tertiary colors were worked out, and the whole thing reduced to charts, and finally to paintings representing the exact depth of color in different teeth and the distribution of that color.

Miss D. A.	Age 19 Ht. 5.6" Wt. 119 lbs.	Red	Yellow	Blue	Co/or Developed		
					Black	Orange	
	Eyes	17.5	43.0	16.0	16.0	1.5	25.5 yel.
	Hair		Black				
	Skin	4.1	3.0	.88	.88	2.12	1.1 red
UPPERS							
U. R. Central.....	Cervical	1.1	1.4	.20	.20	.90	.3 yel.
	Incisal	1.1	1.35	.34	.34	.76	.25 "
" Lateral.....	Cervical	1.85	2.9	1.3	1.3	.55	1.05 "
	Incisal	1.85	2.7	1.7	1.7	.15	.85 "
" Cuspid.....	Cervical	1.85	3.3	1.75	1.75	.10	1.45 "
	Incisal	1.9	3.1	1.85	1.85	.05	1.2 "
" 1st bicuspid.....	Cervical	2.0	2.7	1.6	1.6	.40	.7 "
	Incisal	2.0	2.6	1.7	1.7	.30	.6 "
" 2nd bicuspid.....	Cervical	2.0	2.3	1.6	1.6	.40	.3 "
	Incisal						
" 1st molar.....	Cervical	2.4	3.7	2.3	2.3	.10	1.3 "
	Incisal						
U. L. Central.....	Cervical	1.1	1.5	.20	.20	.90	.4 "
	Incisal	1.1	1.4	.38	.38	.72	.3 "
" Lateral.....	Cervical	1.85	2.9	1.3	1.3	.55	1.05 "
	Incisal	1.85	2.5	1.6	1.6	.25	.65 "
" Cuspid.....	Cervical	1.95	3.2	1.75	1.75	.20	1.25 "
	Incisal	2.0	3.1	1.8	1.8	.20	1.1 "
" 1st bicuspid.....	Cervical	2.0	2.7	1.6	1.6	.40	.7 "
	Incisal						
" 2nd bicuspid.....	Cervical	2.0	2.3	1.6	1.6	.40	.3 "
	Incisal						
" 1st molar.....	Cervical	2.4	3.6	2.3	2.3	.10	1.2 "
	Incisal						
LOWERS							
L. R. Central.....	Cervical	1.0	2.5	.74	.74	.26	1.5 "
	Incisal	1.0	2.4	.76	.76	.24	1.4 "
" Lateral.....	Cervical	2.4	3.4	1.6	1.6	.80	1.0 "
	Incisal	2.3	2.9	1.8	1.8	.50	.6 "
" Cuspid.....	Cervical	2.6	3.3	1.5	1.5	1.1	.7 "
	Incisal	2.3	2.7	1.55	1.55	.75	.4 "
" 1st bicuspid.....	Cervical	2.0	2.5	1.5	1.5	.50	.5 "
	Incisal						
L. L. Central.....	Cervical	1.0	2.5	.74	.74	.26	1.5 "
	Incisal	1.25	2.4	.95	.95	.30	1.15 "
" Lateral.....	Cervical	2.4	3.4	1.6	1.6	.80	1.0 "
	Incisal	2.3	2.9	1.8	1.8	.50	.6 "
" Cuspid.....	Cervical	2.4	3.1	1.45	1.45	.95	.7 "
	Incisal	2.2	2.6	1.5	1.5	.70	.4 "
" 1st bicuspid.....	Cervical	2.0	2.5	1.5	1.5	.50	.5 "
	Incisal						

COLOR ANALYSIS.



Depths of colors in the necks of the upper anteriors.



Depths of colors in the incisal halves of the upper anteriors.

DIAGRAMMATIC REPRESENTATION OF THE DEPTHS OF COLOR TABULATED ON PAGE 308.

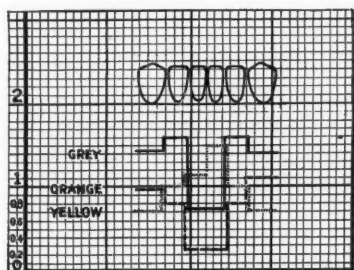
The different depths of color in different parts of a tooth and in different teeth can be diagrammatically shown in charts like those here reproduced.

The horizontal base line of the charts represents 0 in color. Each of the parallel horizontal chart lines represents a depth of 1-10 of a unit, upward from 0. The line locating the gray in the teeth is drawn solid. That representing the orange is drawn in dashes and that representing the yellow, in dots. This set of teeth showed no other colors. This person's hair is dead black, the eyes are brown, and the skin showed a good deal of red.

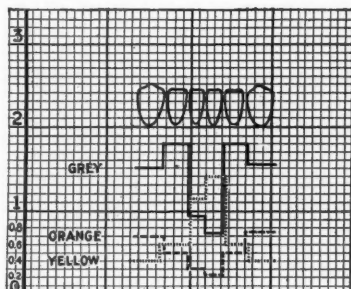
The charts show that the necks of the upper centrals and laterals in this set exhibit less gray than the cutting edges, but more orange and yellow. The cuspids exhibit practically the same amount of gray and orange throughout the teeth, but the necks show more yellow than the cutting edges. This free yellow gives these cuspids their character.

The necks of one lower central and both lower laterals in this set, exhibit less gray than the cutting edges, but the necks of the lower laterals exhibit more orange and yellow. The lower cuspids exhibit practically an even depth of gray throughout, but much more orange and yellow in the necks. There is a good deal more orange in the lower cuspids than in the upper cuspids.

A study of these charts shows how the color deepens and softens in all directions from the incisal halves of the upper centrals, and how utterly impossible it is for artificial teeth all of a shade to meet the artistic requirements of prosthesis.



Depths of colors in the necks of the lower anteriors.



Depths of colors in the incisal halves of the lower anteriors.

Some of the difficulty of that work may be understood when I tell you that it has taken two years to gain the necessary information, and that in addition to our own efforts from one to three experts have been working steadily. They state that they never saw such difficult and delicate work, nor such exacting taskmasters as we have proven. However, we have gotten at least the greater part of what we want and have incorporated it into Trubyte Teeth.

Let me set before you some facts regarding the distribution of colors in different anterior teeth. Let us take as a shade in which to work, Twentieth Century shade 7. The color in the upper central will be found distributed about as it is in the shade tooth, because the manufacturers seem to have paid pretty close attention to the shading in the upper centrals, and to have imitated it pretty well. Their error consists in the fact that they have applied this form of shading to all the anterior teeth.

The shading of the upper laterals is very much like that of the upper centrals in depth, but the incisal third of the lateral is darker. This does not seem quite logical in view of the fact that the incisal half of this tooth is largely composed of the enamel plates, with only a small amount of dentine. But I have the analyses, the charts and the color drawings before me as I write, and they indicate that the incisal half of the upper lateral has more color than the same portion of the upper central. It is especially distinguished by the presence of more gray.

The cervical half of the upper cuspid shows more color than the cervical half of the upper central or lateral, while the cusp shows the widest variation in individual teeth, and that without any apparent relation to the color in the incisal halves of the central and lateral. It has, of course, always been known in a general way, from observation, that the cuspids were darker than the centrals, but there has never been any exact knowledge about the conditions of this variation.

The depth of color in the lower anteriors, as compared with the depth of color in the upper anteriors, differs markedly in different individuals and apparently in different races. I think a fair statement of it would be that the colors seen in the upper teeth are slightly deeper in the lower anteriors. The cutting edges are also generally deeper in color. This makes the color throughout each tooth in the lower anteriors more uniform. The effect of the deeper average of color and of the uniformity affords a pleasing contrast with the upper teeth.

These color effects have been achieved in Trubyte teeth by placing the dentine and enamel bodies in such way as to reproduce the natural variations. This has been made possible by the translucency of the porcelain from which these teeth are made.

These colors can be properly placed only by people especially trained and by allowing them much more time than is required for shading the ordinary porcelain teeth of commerce. This necessarily increases the cost of the teeth, but this increase in cost is trifling when the advantages gained are considered.

The results attained in coloring Trubyte teeth are superior to those which will ordinarily be accomplished by staining and burning teeth by the individual dentist. The colors are in the teeth, are the result of proper placing of the dentine and enamel bodies, and are under the glaze. The results are an enormous stride in advance of what has been heretofore commercially offered.

One who has not closely studied the colors in natural teeth can hardly realize how delicate and beautiful is the color scheme by which nature adorns a really fine set of teeth. The primary colors, red, blue and yellow are, as one who has made a scientific study of color would expect, found in every human tooth. The blending of these primary colors produces the secondary colors—the orange, green and violet. It is very interesting to note the parallelism of form and color in teeth as elsewhere in nature.

As one or other of the three primary types of form is usually dominant in every upper central incisor, and to a certain degree in every human tooth, so one or other of the three primary colors is generally dominant and a color expert might classify most human teeth as pink, blue or yellow.

As much the larger proportion of teeth are, in form, the result of the crossing or blending of the primary forms, so also in color the blending or mixing of the primary colors produce a great variety of secondary or intermediate colors in which orange, green and violet are clearly seen.

It is a rare thing to find two teeth in any given mouth of exactly the same color. Just as it is rare to find a pair of teeth on different sides of the mouth of the same shape. It is these slight variations in form and color which give great beauty, harmony and naturalness to a fine set of natural teeth, and it is mechanical regularity in form and sameness in coloring which make artificial teeth, as they have heretofore been made, so false looking, so unnatural and repulsive.

As a more detailed account of the results of our investigation into the color of natural teeth will shortly be published in book form * and offered to the profession, I shall give here but a brief résumé of this work. The table on page 308 gives a color analysis, according to the scientific method we have followed, of a single set of natural teeth, and

* Prosthetic Articulation.

on the following page will be seen a diagrammatic representation of the depths of color in the incisors according to the table.

The first three columns in the table show the percentages of the standard colors used to determine or develop the actual colors in the tooth which are indicated in the three columns on the right.

When I tell you that for every figure set down in those columns a considerable number of trials with optical apparatus of the most exacting nature had to be made before the final result was reached, you will, I think, begin to understand why this work could not be completed quite as rapidly as some of our impatient confrères thought, and also why a slight advance in the cost of these teeth has been necessary. Trubyte teeth, as I have said, are "shaded" on the basis of this investigation into the color of natural teeth. The upper central is always of the shade on the guide. This is the *dominant* color of the set the shading of which is accomplished by varying the depth of this color. The color in the upper laterals is more evenly distributed throughout the tooth just as we find it in nature.

The upper cuspids are more deeply shaded in both cervical and incisal halves than either the centrals or the laterals. The color in the bicuspid and molars is slightly deeper.

The color in the incisal halves of the lower anteriors is slightly deeper than in the upper.

For the first time in the commercial history of porcelain teeth they are now supplied to the dentist of a color closely approximating that found in natural teeth. The color, being based on nature, gives a far finer effect than the arbitrary method of hand staining or the still more imperfect method of selecting a variety of colors from different sets and assembling them into one.

Dentures made with teeth shaded in this natural way are, artistically, so superior to those made of one shade that a comparison cannot well be made.

In form, in surface texture and in color the Trubyte System of teeth has reached such a high standard of achievement that I hope and believe the finest artistic and mechanical ability in our profession will be aroused by their appearance and stimulated to the production of such results as have never before been known in the history of dentistry.

TRUBYTE BICUSPIDS AND MOLARS—INFORMATION.

And now I come to a part of the paper which describes mechanical advances of such importance to the dentist and to the patient as a masticating animal, that, from this point of view also, it will hardly

be possible to exaggerate the advantages of the new teeth. I refer to the greatly improved forms of the masticating surfaces of the bicuspid and molars perfected by my associate, Professor Dr. Gysi.

Professor Gysi has established the fact that proper forms of porcelain bicuspid and molars cannot be produced by copying natural teeth, because at no time do the natural teeth present all the characteristics essential to artificial teeth.

It is logical that this should be so. The natural teeth are fixed in the jaw. In adult life they are capable of a masticating force of from 100 to 300 pounds, with perhaps an average of 150 pounds. In early life they exhibit deep bites and great efficiency. In later life they exhibit relatively flat bites and require the exercise of great force to make them efficient.

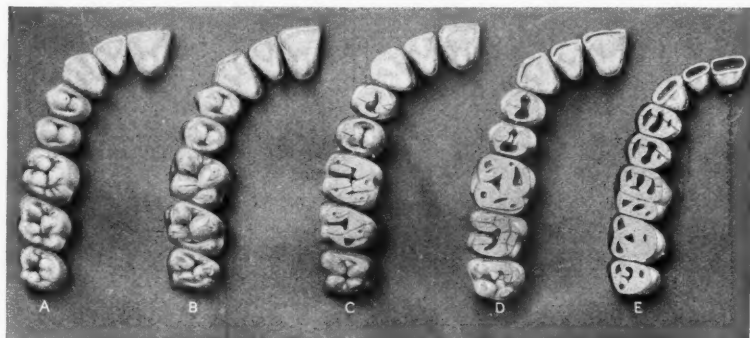
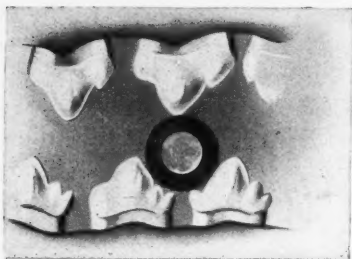


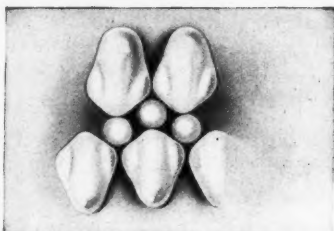
Illustration No. 34.—Five Stages of Wear of Natural Teeth: A. Unworn Stage. B. Greatest Efficiency Stage. C. Reduced Efficiency Stage. D. Much Worn Stage. E. Stage of Extreme Wear. Trubyte teeth exhibit the stage of wear shown in Figure A and the depth of bite shown in Figure B.

Artificial teeth on dentures are not firmly fixed in the mouth and on bridges are less firmly fixed than when each tooth has its own healthy root. Dentures are believed to be capable of exerting a pressure not greatly in excess of 15 pounds, perhaps 20 or 25 pounds as a maximum, as compared with the 150 pounds of the natural teeth. Bridge teeth are capable of exerting less power than individual, healthy natural teeth.

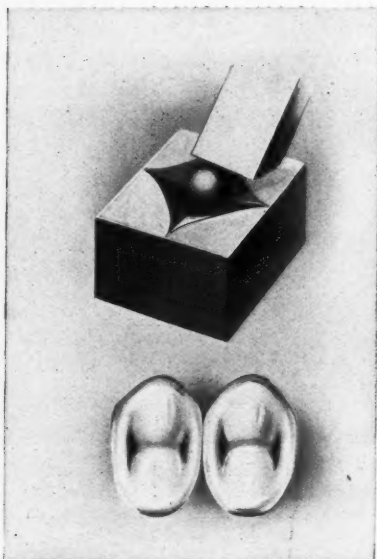
Artificial teeth, then, with one-tenth the power of the natural teeth, must discharge the same functions as the natural teeth, or the food cannot be properly prepared for digestion. They must exhibit shallow bites in order that the dentures or the bridge may not be subjected to severe lateral strains. Teeth which will function efficiently and be stable under such conditions cannot be formed by copying natural teeth,



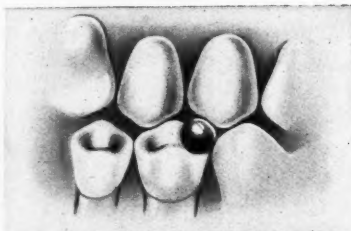
The bone cracking teeth of the dog.



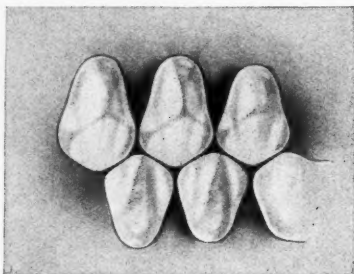
Similar cracking action by human bicuspid.



Diagrammatic representation of a grain trap. Same trap in Trubyte bicuspid.



Buccal cusps interdigitate in articulation.



Lingual cusps open to receive seeds and grains.

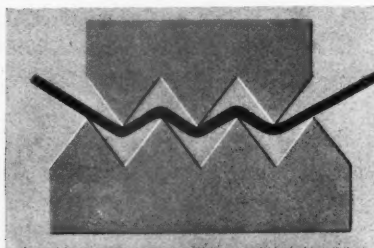


Diagram of tearing action.

Illustration No. 35.

which were designed to function under very different conditions. They can be made only by applying engineering principles to the designing of surfaces which shall function under actual conditions, just as the engineer designs his bridge for the load it must carry.

In the brief space of time left me, I shall draw your attention to the application of these engineering principles only for the accomplishment of some of the greater objects sought in Trubyte bicuspid and molars. The points are:

Proper opening and closing articulation in bicuspid.

Proper sliding articulation in the molars.

High cusps, deep fossae and sulci with shallow bites.

A large number of properly interacting facets on the occlusal surfaces of the molars. Precisely as I have followed the general natural form in designing the Trubyte System so Dr. Gysi has based the forms of his masticating surfaces on nature, but he has greatly improved on Nature in efficiency of mastication as I have improved on form.

PROPER OPENING AND CLOSING ARTICULATION IN BICUSPIDS.

Artificial bicuspid have heretofore been merely little molars. They have exhibited the same form of sliding articulation as the molars. This is anatomically incorrect and deprives the patient of the benefits to be derived from the very important functions of the bicuspid. Their functions are to catch, hold, and crack brittle foods, and to pierce between fibers which have been placed along them and are being held by the sliding articulation of cuspid and molars.

Bicuspid can discharge these important functions only by exhibiting an opening and closing articulation while the cuspid and molars are in sliding articulation. Trubyte bicuspid exhibit this most important form of Articulation.

PROPER SLIDING ARTICULATION IN THE MOLARS.

The articulation desired in the molars is entirely different from that in the bicuspid. When the teeth in the lower jaw come up against those in the upper, with food between them, the buccal and lingual cusps should interdigitate to prevent the escape of solid food, and as the jaw returns to the position of central occlusion, the opposing upper and lower cusps should maintain a certain form of sliding articulation. This form of articulation is very different in character from that heretofore possible to porcelain molars.

Porcelain molars which have heretofore been offered have articulated by the sliding of one cusp past another. This is effective to a certain degree, but not sufficiently so to render porcelain teeth efficient

under the small pressure which they can exert. It is necessary to the maximum of efficiency that each of these cusps should cut across the opposing cusp in much the same way a barber draws a razor across a strap, or like the action of the figures shown in illustration No. 36.

This action greatly increases the cutting efficiency of the teeth by causing each ridge to cut throughout its length, instead of for a short distance only.

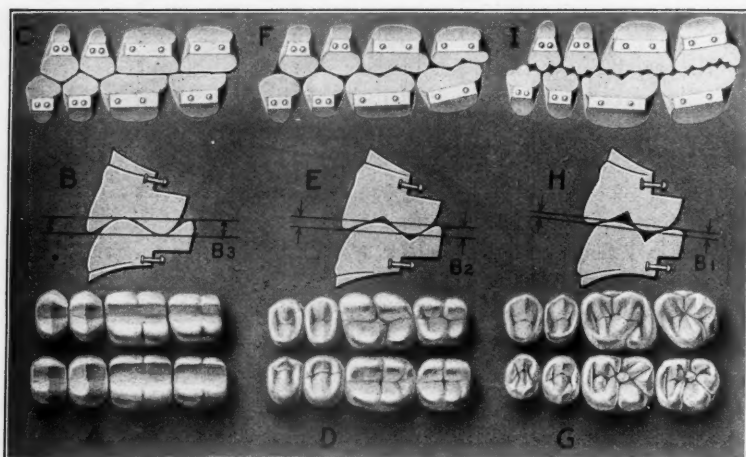


Illustration No. 36.

Figure A shows occlusal surfaces of upper and lower molars ground to articulating form after method formulated by Dr. Bonwill.

Figure B shows same molars occluded.

Figure C shows longitudinal section of same teeth.

Figure D shows the same occlusal surfaces of the anatomical moulds of the Dentists' Supply Company. These are carved to much more nearly correct anatomical form than were the teeth of Dr. Bonwill's time.

Figure E shows molars occluded. The longitudinal groove is entirely different in character from that shown in Figure B. The upper buccal cusp does not overhang the lower molar as in Figure B. The depth of bite in these teeth is only half as great as in those shown in Figure B.

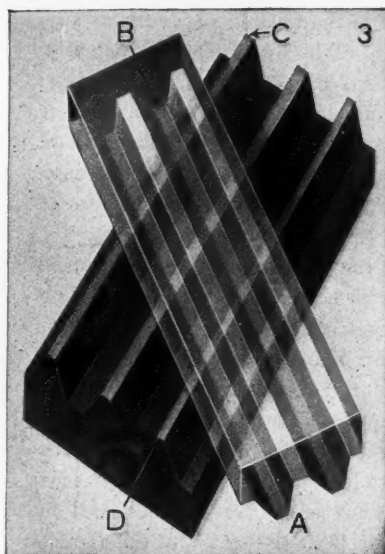
Figure F shows a longitudinal section of the same teeth.

Figure G shows the occlusal surfaces of Trubyte teeth, with the formation for cracking, tearing and cutting.

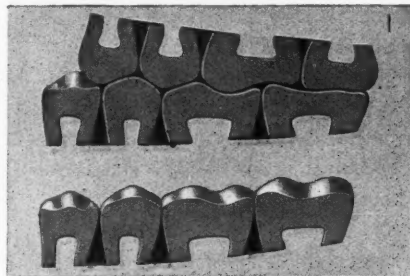
Figure H shows Trubyte first molars occluded.

Figure I shows a longitudinal section of these teeth. Instead of presenting the flat opposed surfaces shown in Figure C or the single convex surfaces shown in Figure F, these teeth exhibit from two to five grooves and from three to six cusps each.

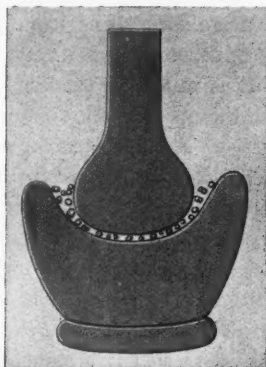
The formation of cusps for such interaction is possible only by the application of engineering principles. I have seen the formulæ and the methods by which Professor Gysi has arrived at these results, and they are as complicated as the designing of a cantilever bridge. The action of each part of each tooth has been known before an instrument was taken in hand for the carving. It is the highest form of praise to



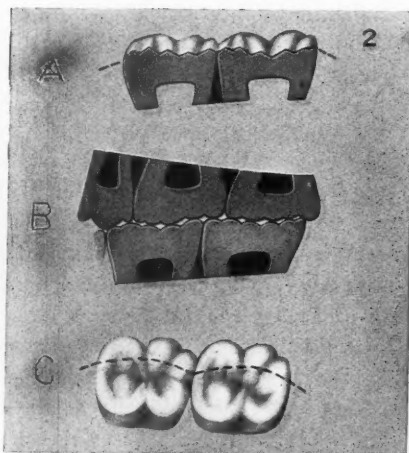
Diagrammatic illustration of the cutting action exhibited by opposed ridges and facets in Trubyte molars. If the point A of the upper block be carried to the point C of the lower block, and then the upper block be so moved as to bring the point B directly over the point D of the lower block, each of the opposed ridges will cut throughout its length with a drawing motion. This is the longest and most efficient "cut" possible to these ridges.



Diagrammatic representation of the plan on which artificial molars have generally been shaped in the past. The broad surfaces cannot cut up foods to isolate the cells. They can be approximated only by the exercise of great force.



Food cells are isolated and the cell walls broken by the rubbing together of the facets. The rubbing action is diagrammatically shown by the mortar and pestle in which substances are pulverized.



A. A cross section of Trubyte lower first and second molars showing five ridges in each tooth. B. Ridges and facets in Trubyte upper and lower molars opposed. C. The cross sections shown above were made at the dotted line in this figure.

Illustration No. 37.

say that the resulting teeth are as near to the theoretical results as anything in porcelain can be. They set up easily and function efficiently.

It must not be thought that because I have quoted Professor Gysi as to the application of engineering principles to the formation of these surfaces, nature's laws have been departed from, and unnatural forms produced. Such is not the case. Nature is the most consummate engineer of us all. She adapts her forms to function with the exercise of the smallest possible force, and with the least disturbance of parts.

The laws which she employed for the formation of the permanent teeth and which made them efficient with the relatively small masticating force of the child have been employed. The depth of bite has been reduced so that it is much more shallow than in efficient human teeth, and only half as deep as in the present anatomical moulds.

The ridges have been arranged to present the longest cutting action possible and to bring into action a large number of small surfaces, interacting properly, in order that the food may be more thoroughly masticated. The forms of these ridges have been carefully designed by applying the laws exhibited in human teeth at the period of their greatest masticating efficiency.

I have been asked whether teeth so accurately formed can be set up by the average dentist. In reply let me say that they can be better set than any other and less accurate forms. They cannot always or perhaps often be articulated for individual peculiarities of jaw movement without some small amount of grinding, but this grinding can be done with the carborundum and glycerine, and will be neither tedious nor difficult. Little or no grinding with a stone should be necessary.

IMPROVED FORMATIONS IN CUSPID EDGES.

Both Dr. Gysi and myself have contended from the first that the highest success in the making of artificial teeth cannot be reached by baldly copying natural teeth.

Dr. Gysi makes the same claim from the point of view of efficiency in mastication. He has originated a phrase that will become classic in prosthetic dentistry which is that "the problem of restoring mastication is an engineering problem."

The cutting edges of the cuspids present the most anterior example of the application of engineering principles. For these edges must be quite differently formed in porcelain teeth than they are in newly erupted natural teeth.

Natural upper cuspids are often very beautiful in form, and before wear has mutilated them, present long and often pleasing cusps. These are the forms which have generally been reproduced in porcelain teeth.

They are the forms which have made it practically impossible to arrange the upper and lower cuspids properly, without extensive grinding of the edges. Many find this grinding difficult of accomplishment.

The edges of the upper and lower cuspids here shown have been shaped to function properly. The anterior facet on the edge of the lower cuspid is always short, so that it may occlude with the distal facet on the cutting edge of the upper lateral. The mesial facet of the upper cuspid is usually long, in normal dentures after wear, in order that this tooth may both occlude and articulate with the lower cuspid, and that the point of the upper cuspid may pass through the interdental space posterior to the lower cuspid and not climb on the lower. This is one of the most important relations in the articulation of dentures, and has heretofore been one of the most difficult to attain. The fact that it may easily be attained with Trubyte teeth will greatly facilitate the arrangement of these teeth and their efficiency in mastication.

SUMMARY.

A brief summary of the facts and principles involved in this system of artificial teeth:

1st. This system is based on the new classification of the natural teeth which I have discovered, the essential feature of which is the three primary or primitive forms of the upper central incisors common to all races of men and the anthropoid apes.

2d. By the crossing or combining of these primary forms every conceivable form of human tooth can be produced.

3d. By applying a knowledge of design to the three primary forms of natural teeth a system of teeth has been produced in which all the lines and contours of any given set are in more perfect harmony and balance than we usually find in Nature.

4th. As the three primary forms of human teeth are common in all races, therefore a system of artificial teeth founded on these primary forms is equally suitable for all races of men civilized or savage.

5th. As investigation shows that there are but a few characteristic forms of human faces which can all be grouped in a series of a dozen or less, to which groups all slight variations in form may be referred, therefore a few forms or types of teeth, very carefully designed and modeled to harmonize with the more characteristic forms of faces, is immeasurably better suited to the production of natural and artistic effects in dental prosthesis than any number of moulds produced indiscriminately and without any knowledge of the above-mentioned fundamental facts.

6th. A close study of the relationship of the contour lines of the

teeth and face has enabled me to design artificial teeth that will often be found to give a more perfect harmony with many faces than did the natural teeth of that subject, the reason for this being that the laws of heredity as exhibited in mixed races rarely permits a perfect harmony in the different features of the body.

7th. The arrangement of this system of teeth into classes and groups based on Nature and corresponding with the forms of faces for which they are designed, both being shown in illustrations placed side by side, enables the dentist, aided by the very clear and simple table of classification, to select the teeth best suited for any case with an ease, economy of time, and certainty of results never before approached.

8th. A method of finishing the labial surfaces of the plaster models for artificial teeth, and the accurate transfer of this to the moulds in which the teeth are cast, has been devised with the result that a perfect imitation of the surface texture of a fine natural tooth has been secured. The esthetic value of this one feature of the new system of teeth is sufficient to merit the indorsement of all progressive dentists.

9th. A method of coloring porcelain teeth has been worked out by strictly scientific methods, based on a color analysis of the finest natural teeth, and applied to the Trubyte System of teeth, producing beautiful natural effects far beyond anything previously accomplished.

10th. My associate in the work of producing the Trubyte System of teeth, Professor Dr. Alfred Gysi, has given years to the study of the mechanical principles involved in mastication and to all the conditions necessary in artificial teeth for the highest possible efficiency in the performance of this function. Basing his work entirely upon nature, as I have in designing the forms of teeth, he has recognized that the conditions under which mastication must be performed with artificial teeth are totally different from those which obtain in the use of natural teeth. He has therefore adapted the natural cusp, groove and sulci formation in the relations of the upper and lower teeth in such a way as to secure far great efficiency in mastication than would be possible even with the finest natural teeth if inserted on plates as artificial dentures. While the cusps are high and the fossæ and sulci deep in the new teeth, thus making them very effective in holding, tearing and grinding food, yet the "bite" is actually more shallow than in efficient natural teeth or in other porcelain teeth which manifest even slight efficiency. This permits easy and comfortable gliding of the upper and lower teeth on each other in lateral and in backward and forward movements.

With all of these advantages of scientific form and accuracy in all their features the new teeth will be found, when the dentist is once accustomed to them, more easy to arrange on any form of articulator than any

teeth heretofore made, the perfection of the relations of the upper and lower teeth showing at once exactly where they should be placed.

Gentlemen, speaking not only for myself, but for all who have taken part in this work, I am expressing my most sincere convictions, when I say that no more concentrated and determined effort has ever been made in the interests of dentistry than that involved in this new system of artificial teeth.

Scarcely more than the bare results and conclusions could be embodied in my presentation of the subject to-day. A detailed account of all the experiments made, of all the scientific work done during the past four or five years, would fill a large volume.

It has been our firm determination to do this work so well that it should be done for all time. It has been our desire and intention to set the standard of prosthetic dentistry so far above the position it has hitherto occupied as to make it impossible from this day henceforward for any self-respecting dentist to continue working in the old ways and with the old materials.

SUNSHINE

DID you ever crave for sunlight
During dark and gloomy days—
Or, in some sleepless midnight
Wonder if the old world pays?

There's not a man that's living
Whom this haunted thought possessed,
But could throw off such misgiving
If this secret he'd but guessed.

Now, sunshine is not wholly
That force by science named;
Those beams of light are solely
One kind the world has claimed.

Behold, a psychic force called Love;
If allowed its fullest sway,
Just like the light waves from above
Will drive dark hours away.

Aladdin's lamp ne'er played a part
Bestowing lavish treasure,
As Sherlock's open loving heart
Which gives to all full measure.

—DAVID E. SHEEHAN, D.D.S.

in *The Dallas Daily*.

With apology to author for paraphrase.



"SHERLOCK"

THE PURSUIT OF THE MOOSE

By C. S. HOLMES, D.D.S., LUBEC, ME.

Dr. Holmes's account of the pursuit of the moose will appeal strongly to the hunter. A "week in the woods," with no thoughts of work, no appointments to keep—no calls upon one's time—save the "call of the wild" and the "call of hunger," satisfied by game cooked at the campfire—this must be joy, indeed.

THE moose in the picture was shot at Crawford, Me. It was a very large one, weighing nearly one thousand pounds, and we were certainly very proud of our prize.



Our prize of last year's vacation.

There had been a light fall of snow. Bob, my companion, and I started out before daylight. As it was getting light, we found a place where five deer had crossed and we started to follow them; we had gone about one-half mile on the deer tracks, when to my surprise, I saw two moose feeding about one hundred yards to the left.

Both our rifles spoke twice in rapid succession. As one was a cow moose, we could not shoot her, so all our attention was turned to the bull. He stopped a moment, then turned and ran. Then began

an exciting chase. He was wounded badly, and we came up to him several times, finally stopping him after a chase of about five miles across a very thick swamp. On examination, we found nine bullet holes in him. My first shot broke his foreshoulder, but still he ran. It is surprising how badly they can be hurt and get away. He was about dying as he fell close to an old logging road, so we got him out without cutting him up, which would have been the case if he had stayed where we had first shot at him.

I take at least a week in the woods every fall; this I call my real vacation, as I gain more in that time than I would in a month in the city.

A MINNESOTA VACATION

By J. A. B. SROFE, D.D.S., LEESBURG, OHIO.

I should like to help with the Vacation Number by sending a good account of my trip to Minnesota, which I took last September, but unfortunately I am not blessed with as much gray matter as the Editor of *THE DIGEST*, so I cannot give a very interesting description. I am afraid if I attempted to write a paper of any length I should have to call it "Twenty Years of Practice in the Woods," for I have always been in a small town.

I would, however, like to help some, so I am sending a picture that was taken in Ramsey State Park, and as I stood looking out over the Redwood River, I felt that never had man been blessed by the sight of a finer view. What a great country God has placed here for us all if we only had the sense to appreciate it or would take the time to enjoy it.

Why not do as the Editor said in his "Corner"—"Let us forget root canals and bridges, fussy patients and backaches." I say "let's." Let's get out in the open and enjoy what is put here for us to enjoy. Let's forget "to practice" for a few weeks. Let's mix up a bit with the boys, and if we've got a wife and chicks, let them come, too; for we don't have much time with our home folks when we are busy all day. If we make up our minds to do this every year it will pay us, I am sure, and we will come home refreshed, rested and ready for work and in better condition to take hold and cope with Mrs. or Mr. Fussy Patient.



"If thou art worn and hard beset
With sorrows that thou wouldst forget;

If thou wouldst read a lesson that
will keep

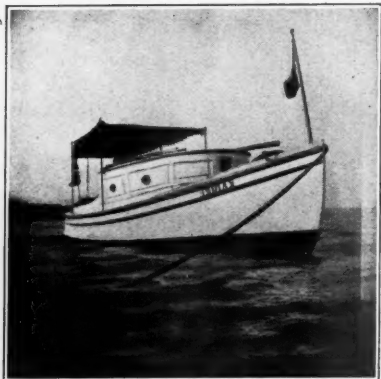
Thy heart from fainting and thy soul
from sleep,

Go to the woods and hills!"

—*New York Times Book Review*,
November 2, 1913.

CAMP LU-RELIA ON THE MOBJACK

By J. W. MANNING, D.D.S., NORFOLK, VA.



The good ship "Indian."

Camp Lu-Relia on the James was described in my vacation notes last year. This narrative will have to do with Camp Lu-Relia on the Mobjack.

Having spent a portion of Saturday getting the "Indian" ship-shape and putting on board the tents, cots and other paraphernalia, everything was ready for an early start on Monday morning, July 28th, on our second annual family outing.

It had been decided to pitch camp this time at mouth of the East River, on Mobjack Bay.

This was to be a trip of about 45 miles across Hampton Roads, Chesapeake and Mobjack bays. These waters get very rough on short notice at times. I did not care to subject the wife and daughters to the possibilities of a rough trip in the small boat. They, with the cook and the pet collie Snookums, went forward via Old Dominion daily steamer "Mobjack."

My son and I took an early start, lifted anchor at 5.00 A.M., and the "Indian" was soon on the warpath with smooth even pace.

I noticed as we were getting under way that there was a slight fog settling. A half-hour's run brought us to the mouth of the Lafayette River at the Elizabeth. By that time the fog was getting quite heavy, and we could only see a few hundred feet ahead. Our compass gave us the course, but we soon found ourselves necessarily coming closer to the channel with its larger boats, that were constantly sending out a note of warning, so at exactly 6.00 o'clock we dropped anchor to wait for the fog to lift.

I always believe in making the best of circumstances. I remembered my fishing tackle, and thought I should like to tackle the fish, which are nearly always to be found in any part of Hampton Roads.

But I had no bait. Then I remembered a piece of mutton from Sunday's dinner which was on board to be of use in camp until the cooking force should get fully organized. I soon had a piece of that on a line, and once overboard it was a wait of only a minute or two until I had a crab, and then I was ready for business. Wymer rang

the fog bell and caught crabs for me, and I had three hours of fine fishing with about fifty nice fish to show for my efforts.

At 9 the fog lifted suddenly. Soon the "Indian's" nose was headed for Mobjack.

Leaving the Rip Raps behind us, we passed around Fortress Monroe and headed for York Spit Light. The day was ideal and the water so smooth there was hardly a ripple. On we went by York Spit Light and soon New Point Comfort Light came into view. There we entered Mobjack Bay and headed for the East River. We arrived in good time, having made the trip in four hours and forty-five minutes actual running time.

The camp site had been previously selected, arrangements made for flooring the tent, tables, chairs, etc. With willing hands on the job, everything was soon unloaded from the boat and the tents were up. In the meantime a negro had been cleaning fish, and as soon as the stove was ready the cook was frying fish, and all hands were soon quite busy.

Then began a very strenuous week. There was much fishing, boating and bathing to be done, and with wading and hunting for clams and mussels there was not much time to lose. We were usually hungry at meal time and when night came ready to sleep, which we generally did if we were not disturbed too much with wind and thunder storms, as we were for two nights, when it seemed that the wind would blow the tent down. The tent was pitched under four large cedar trees, which were used to secure the main guy-ropes; this enabled us to weather the storm safely.

I have the honor of being president of the Colonial Place Boat Club. I had invited the club to spend the second week with me in camp. So on Monday morning, Mrs. Manning and the girls took board and lodging in a farmhouse. With Bob as cook, Wymer and I began the task of getting ready for our visitors.

About two o'clock, with the aid of my binoculars, I was able to pick up the fleet several miles down the bay. We were soon aboard the "Indian," and ran out to meet them and pilot them into port. The "Indian" came in followed by the "Virginia May," "Becky Sharp," "Comet" and "Arbo-well."



Wymer and his private tent.

When all hands were counted we had eighteen men in camp besides the cook. It would make this story too long to recite all the special events of that week. Nothing serious happened except one boy fell overboard in about 25 feet of water, with a swift tide running. His father



Starting for some fishing.

was soon overboard after him, and keeping him up. A handy rope attached to the stern of the "Indian" for just such emergencies was thrown to them and both soon hauled to safety.

We took many excursion trips about the bay and up the rivers and incidentally caught about a thousand fish all told.

Many beautiful homes and handsome estates are to be found along these rivers; among many others is Dixondale on the North River, the

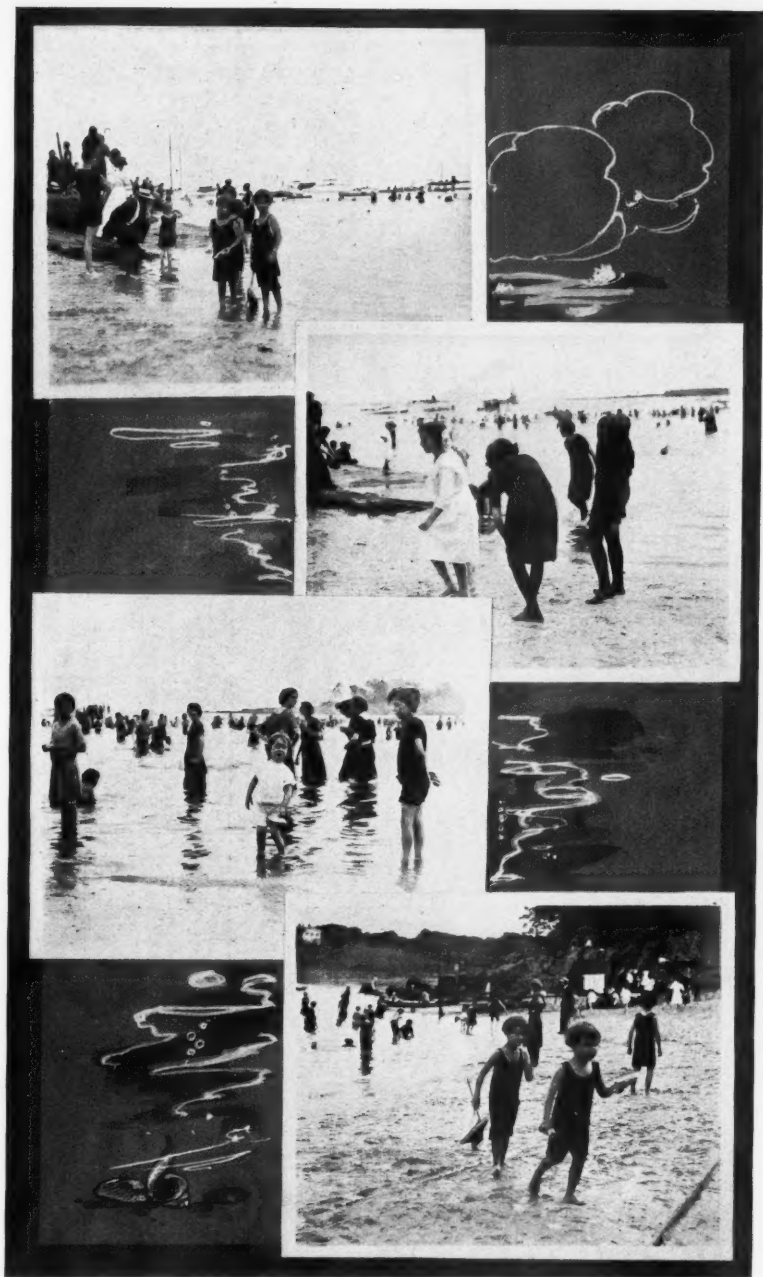
handsome estate of Thomas Dixon, of New York.

Saturday morning bright and early we broke camp, soon had things loaded and were on our way homeward bound.

Again weather conditions were fine, with hardly a ripple on the water. The "Indian" sped on as if proud of the record she was making, for we made the 45 miles in 4 hours and 21 minutes. She has been very quietly riding the waves this past winter, but springtime is in the air now. I begin to feel the working of the Motor Boat Germ under my hat. The vacation feeling is beginning to steal over me. I have in mind some fine stretches of beach, some nice shady nooks and some fishy places which are all calling invitingly. Before the summer is gone, I shall lock my office door, put on the outside a card saying I am at Camp Lurelia on the somewhere.



Some members of camp—including the collie and Bob—the cook—the most popular one in camp.



"By sports like these are all their cares beguil'd
The sports of children satisfy the child,"—OLIVER GOLDSMITH.

SOME FEW PICTURES OF LAST YEAR'S VACATION

BY S. A. ALLEN, D.D.S., LOUP CITY, NEB.



Breathing ozone.

"The year's at the spring,
 And day's at the morn,
 Morning's at seven;
 The hillside's dew-pearled;
 The lark's on the wing;
 The snail's on the thorn:
 God's in his heaven—
 All's right with the world."
 —*Dental Summary.*

"Right now it 'smells of spring' here in the country, and I have been thinking that we who live in the country have reason to rejoice. Ours is the real spring song—the changing of earth's coat. I saw a robin to-day—toilers opening the soil and all the world seeming to start afresh to live and give.

"I love the spring, my hope wells up with every sign of Nature's awakening. He of the city 'mid unchanging streets and stone walls wafted with smoke, must note the lawn or tree with interest, bringing to his mind the field and stream, the open country in which GROWTH and LIFE is the reason why for everything: that's the place I live." And the above just expresses my own feelings when the spring days come around. I want to get away where I can breathe sweet, pure air, and go hand in hand with Nature for a while.

The pictures given here were taken on my vacations at different times, and represent only a small part of the many beautiful places I have seen. A camera is almost a necessity on vacation trips; after our pleasant outings are over and we are settled down to hard work again, we can in our spare moments, by looking over our pictures, recall to mind this or that place where we had such good times;



"Thot I heard sumfin."

the many jolly laughs over each other's stories told by the camp-fire; and the long, sweet sleep, sometimes broken by a little voice that



The day was warm and I could hear the locust from the still tree tops.

says, "thot I heard sumfin." All this and lots more we carry home with us to think over and say, "Yes, we'll go again next year, surely." And when next year really comes and we are all tired out with work



And this and all pictures of its kind make me glad.

and have that "awful gone-all-over feeling," we say to each other, "Let's go"—and we do go.

A JOLLY OUTING

By W. A. McH., D.D.S., NELSON, NEB.

These two pictures were sent us by a friend too modest to write us the story. It will not be hard for our readers to make a story for themselves when they look at the pictures.



"Us is like worms; worms like to wiggle, us does, too."



"Nebraska fish and Nebraska melons are not at all bad."

We make out that, with such a good-looking, jolly set of people, good times must have been rife.

Next year we will have the story, perhaps?

On Board the Nereid.

Knowles A. Smith
Providence, R. I.

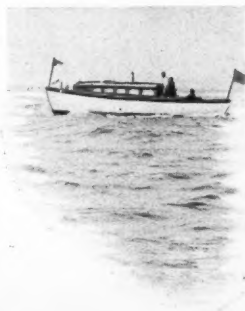


It was Friday, August 1, 1913. Mrs. Smith, the children, and I had planned and looked forward to Au-

gust 1st for weeks and weeks ahead, because it was to be the first day of our vacation, which we always spend together on our thirty-three foot motor boat, "Nereid." We had our stock of provisions all aboard and stored; our gasoline tanks filled to the brim; ice box full; coal and wood for the stove; all kinds of fishing paraphernalia; chart, compasses, barometers, marine glasses, and everything all ready for our annual cruise. Just think of it! We were to be gone two whole weeks.

We cleared away from Warwick Cove, our home port, at 7.30 Friday morning, for we had a long run before us. I referred to my log book for the following:

"Weather fair, excepting a good breeze from the south. Tide and wind dead against us, very strong. Quite rough. Engine running a little better than half speed. Revolutions, 440. Made Plum Beach Light at 8.45, running three-quarters speed now. Very rough. Course southwest by south. Made Whale Rock Light at 9.10. We are now just getting out to sea and there is a ripping good swell on. Going full speed now. Quite thick. Sailing by compass altogether. Course, southwest by south. Mrs. Smith and the children are in the cabin trying to keep the dishes and grub in their places. She is trying to tell me that Friday was always noted for being an unlucky day to start, but I hardly hear her, for my attention, just now, is on the compass. We are rolling to beat the band, but the wind seems to be going down. We can just pick out Narragansett Pier to the Starboard. Time, 10.15; we can just see Point Jude with the glasses. It is decidedly smoother and some clearer, now. Mrs. Smith takes a turn at the wheel, same course. We have Point Jude Light abeam at 11.02. We change our course to almost due west and make the Breakwater in a few minutes, and at 11.30 we are inside and only a few minutes more run to our harbor, Salt Pond."



Out to sea.

The first thing we did after anchoring was to get dinner. The tide being low, I went ashore and dug some clams, while Mrs. Smith boiled the potatoes. Now, I tell you, those steamed clams were just great, and it is needless to say that we did full justice to them. After the dinner dishes were out of the way, we ran out to the Breakwater to get some fish. They are very plentiful here, and in a short time we had a fine mess of tautaug and flounders. This sport the children enjoyed immensely, as they caught their full share of fish. We ran back to the Point and dressed some of these fish for supper. The rest I took ashore and traded with a lobster fisherman for some lobsters—he using the fish to bait his traps. Supper over we turned in early, as we were somewhat tired.

Saturday we were all up bright and early and cleared away for Block Island. This is a long, hard run, right out to sea, and I wanted to get across before the wind came up. We made Block Island all right, and at seven o'clock were safely anchored in the old harbor. We prepared breakfast right away, and what do you think we had? Well, I suppose you will smile, but we boiled out our lobsters and had a salad. It was just great! I am well aware of the fact that lobster salad is not the rule for breakfast, but anything goes when cruising.

After breakfast we cleared up ship, dressed up a bit, and went ashore. Mrs. Smith took the children over to the Bathing Beach, while I hunted up some old friends of mine.

After lunch we took a short run out to sea to try our luck at fishing, but as they did not seem to be inclined to bite, we gave it up and tied up for the night at the old harbor, Block Island. Supper over, we took in the moving pictures, which pleased the children.

Sunday dawned bright and fair and we took it easy. Nevertheless, we had a very pleasant time together, reading, playing with the children, etc. We were in for a good time, and we were certainly having it.

Monday we were up with the sun and were off for the fishing ground, Shark Ledge, about ten miles east of Block Island. Here, mackerel were being caught by the hundreds, by the regular Block Island fleet.

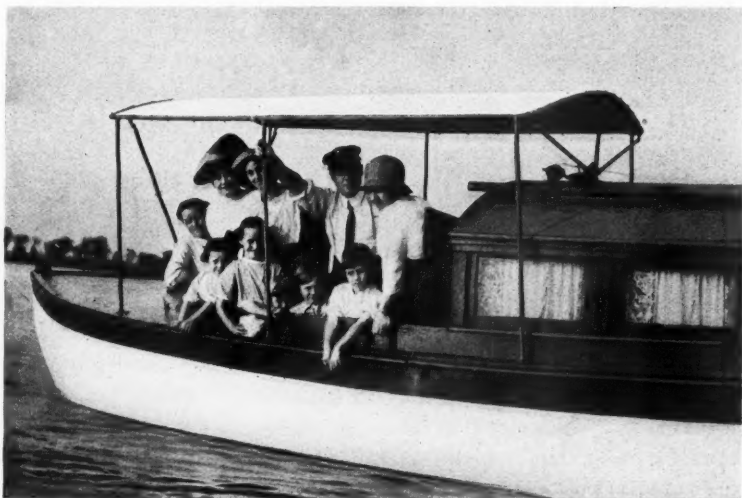
Although we did not catch as many as the "Old Salts," we caught all we wanted, and could possibly use, having some to give away. We were back to our place of anchorage at nine o'clock and after dressing a few of those mackerel had a splendid breakfast. You can hardly realize just how good things



The pulpit for sword fishing.

do taste, when cruising! The salt air and out-of-doors life simply work wonders. We forget all our cares and troubles and business worries, and also forget that there is such a thing as teeth or toothache, and really live.

I could tell you how we went bathing; I could tell you more of our fishing trips—how we caught tuna, bluefish, etc.; I could tell you of our moonlight sails; of our company, and the many good times we



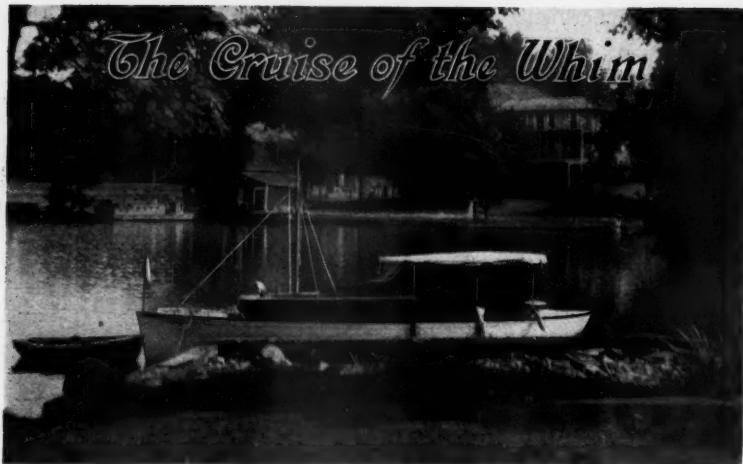
We had plenty of company.

had; but I must leave some of this trip to your imagination, simply saying that we had a glorious time, and it was with much regret that we finally set sail for home, thus ending an exceedingly pleasant vacation.

TRAINING FOR VACATION

"If your office is on the sixteenth floor of an office building, get off the elevator on the twelfth and walk the remainder of the way every day for a week before you start your vacation," advises a physician of "preventive measures." "Increase your walk by about two floors a day and then you will have 'wind' when you plunge into your two weeks of exercise on your annual vacation.

"American business men do not understand dosage," is the way another physician puts the same thought. "He takes too much work for too long a time and then swallows an equally overpowering play pill."—*System*.



By GEORGE S. CAMERON, D.D.S., MONTREAL, CANADA

If any of the readers of THE DENTAL DIGEST are contemplating a canoe or motor boat trip, then gather round and I will tell you a route to follow, which I am sure will be one of the nicest ever.

An ideal route for launches and canoes should be strewn with towering rocks, sandy nooks, mirrored islands, beautiful bays, narrow passages, varied scenery of lakelet and river, with no very great expanse of water where waves may run high, ideal camping spots, good fishing, places scattered along where supplies can be purchased—all these and more are found on the "Rideau Lakes Route," but along the way are scattered many dangers if the channel is not followed. These dangers consist of stumps which are submerged under water over certain points of the route.

Dr. Elmer J. Lake, Kingston, Ontario, has compiled a very complete chart for this route; so that these so-called sports of danger give the skipper a chance to demonstrate his skill as a navigator. In this way interest is kept right up to the finish.

Four of us made this trip two seasons in a launch thirty feet long, hunter cabin, canopy over pit, from which we could drop canvas sides. We did all our cooking on a small coal-oil stove; slept on board, with the exception of two nights. The weather always bears an important bearing on a trip of this kind. The last time we made this trip we ran into a good deal of rain, but even this could not dampen our spirits, and then again we could all the more appreciate the sunshine when it arrived.

We sailed from Hudson to Ottawa on the Ottawa River. Here we enter the Rideau Canal and follow this route, which takes us

through a series of lakes, etc., to Kingston, Ontario, situated on the north shore of St. Lawrence River, northwest of Alexandria Bay. We sailed down the St. Lawrence to St. Anne's, about twenty-five miles from Montreal, and entered the Ottawa River, landing back at Hudson. We covered altogether about 425 miles during the two weeks. The total cost of the trip was \$115.

The gem of the trip is from Kingston to Smith Falls on the Rideau, a distance of seventy-one miles. Canoeists usually have their canoes shipped to Smith Falls and paddle to Kingston. Following is a brief account of how we spent our time from Hudson to Alexandria Bay. In conclusion, let me congratulate you, Dr. Clapp, on the idea of a vacation number. I am surprised to know that there are members of the profession who stick to the grindstone all year round. Boost them out and they will feel all the better for it.

A few scattered notes from the cruise follow:

July 23d.—Started at 3.30 P.M. Moderate weather. On board: Skipper, F. Hutchison; Engineer, E. Hutchison; Cook, H. Throsby; Ship's Poet, G. Cameron; also Mr. Boyd.

July 24th.—Skip. got us up at 5 A.M. Big kick, mostly from Cook. Got away 8.30; sailed till 11.45; tied up to an old wharf—had some ship's mess—Engineer drew his bowl last and got all the tit-bits. Had a swim, except the Cook—claimed that good cooks never wash. Got away about 1.30. Rain came down quite heavily for about an hour. Then we arrived at Ottawa at 5.45 P.M.

July 25th.—Started for Locks at 10.45 and got through at noon.

Did some shopping and got away about 1.30 in a blaze of glory, crew decked out in khaki (Cook not counted as crew). The river from Ottawa to Hartwell's is narrow, and on the left bank for quite a



Going through the Lock at Jones' Falls.

distance a pretty park is situated, and on the right thickly wooded. Passed Hartwell's and Hogsback, and tied up at Block Rapids for

lunch at 3.15. The Cook and Engineer superintended the ordeal and produced the meal de resistance up to date—n.b., potatoes not quite cooked. Got away at 5 P.M.



"Whim" resting quietly after stormy night
on the St. Lawrence.

July 26th.—After the Poet had prepared breakfast, which, by the way, seems to have befallen his lot—such is the fate of one who happens to sleep nearest the stove—coffee up to date had not been a great success, and then the rest of the crew being connoisseurs, the Poet had a bright idea to settle the coffee. In the still of the early morning, when all was quietness, he slipped some vinegar into the coffee; breakfast—as usual. Poet tastes coffee

first and declares it no good and is much downcast over same. But to his surprise, the rest of the crew did not detect any noticeable change, and so there the matter dropped. (Must have been pretty bad coffee.—EDITOR.)

The swing bridge at Beckett's Landing had the pleasure of knocking our mast head down, notwithstanding the fact that the Cook was on the lookout at the stern. The course from Beckett's Landing up is well buoyed this year and no trouble was encountered in this part. I cannot pass here without making note of the beauty of the river here, especially a part called the "Catch All," where the river takes a decided curve. The river is narrow and beautifully wooded, and the warm day, with blue sky, set it off to advantage.

July 27th.—Beautiful day. Started at 8.30, expecting trouble, but to our pleasant surprise found the channel well buoyed out and had no difficulty in finding channel. Wells' Lock is one of the prettiest kept on the river, but here it was very noticeable that the weather so far had been very dry, as everything seemed very dry and burned up. The approach to Old Sly's Locks is through a beautiful cut of about one quarter of a mile, the edges of which are beautifully hedged by a shrub of evergreen.

Arrived at Smith's Falls at 11.55 and had dinner at the Russell House. The larder was replenished here, and it would be remarked also that sausages played a very important part of the stores, as they are always welcomed on a trip of this kind.

July 28th.—Weather fine. Started at 9.18 and had a pleasant trip through Lower Rideau Lake and finally located on the Salmon Grounds and chose what we thought a likely spot for camp, and after much trouble the tent was gotten out and pitched, and we called the place home.

August 3d.—Weather fine. Took on some gasoline and started about 9.35 A.M. and followed the "Porcupine" and "Hilda M." The Skip. of "Hilda M." took our fancy. Had keen eye and hung over his boat in a position somewhat similar to that of a racing cyclist and watched every mark on course. Had a delightful run and found course well buoyed out this year. Took good look at spot where we struck stump last year. At Kingston Mills we pushed to front and arrived at Kingston at 2.50 P.M. The Skip. of "Hilda M." got mad and threw away his chart and got hopelessly tangled up. Eventually reached Kingston with his chest sticking out. Cook and Skip. went out and did some shopping, and we certainly had some meal—lamb chops are the only thing to buy; always sure of having something palatable. Put on gasoline at boathouse and left about 4.45 and ran till we were past Nicholson's Isle on the Canadian side. Picked a likely looking bay and decided to tie up for night.

Soon the rain came and all were glad, but a wind of no mean force sprang up with it. All hands were on board and the awnings put down, but soon the wind and rain increased and a real storm was blowing. Then the anchor light blew out. Sleep was out of the question. After a short consultation, more rope was allowed the anchor and the searchlight was put on shore and all hands watched to see if we were drifting in. The wind kept on howling, and at last it was decided that the anchor was not sufficient. The Engineer got up steam and we made for the opposite shore, and it was some ride, groping in the darkness. We eventually nosed into the opposite shore and anchored and spent the night in safety. (Time, 2 A.M.)

Hitched on another rope and made good. Yachts of all descriptions were out in all their regalia. It was a very pretty sight to see, all spotless white and polished up to the handle. Cook did brass cleaning and we looked fine.



G. Cameron with the landlocked salmon caught on Big Rideau Lake.

RECREATION DAYS

By HARRY R. CAMPBELL, NEW YORK.



"Taken after we were married."

There is always something provided by old Mother Nature that just suits our own particular taste. To me there is nothing like my 18-foot canoe and my better half as a companion, and she is some paddler, too. At the end of a vacation she would be able to punch a blow that would make Jim Jeffries take notice.

There is plenty of romance, too. If you don't believe it, just look at our picture (taken after we were married). We just couldn't wait until we pulled our Gold Town into the water.



Waiting—in pleasurable anticipation.

Come on, fellows, let us get out into God's open air for a while and forget our monotonous grind. You say you cannot do it; but you can, if you but try, and it doesn't take as long to cultivate the habit as it does to learn to eat olives, either.

Within one hour from our 2 x 4 apartment in New York lies one of the most beautiful little streams in the country. The minute I see a half day that I can spare, away we go for the little old Millstone River, with its big trees that in many instances spread their branches half across the stream to where they meet the branches of the trees on the other side. To glide along in water as clear as a crystal and under the arbors formed by those overhanging branches, makes you forget that there was ever anything like

trouble or worry. And you can make it last as long as you like, for this little stream offers this wonderful restfulness for twenty-five miles or so. When we tire of paddling, my "frau" always has a good book along, and she will bolster up with a good supply of pillows, and yours truly will light up his corn-cob and keep up just enough momentum to steer the canoe. If there was ever anything invented that would rest your tired, jumping nerves more than this sort of life, just send me the prescription.

But the best is yet to come. After we have been loafing along in this fashion we will hear the twelve o'clock whistle of a distant factory. It is then that we realize that we are a mile or so from home and the good "eats" awaiting us. We are both ashamed to say how much we eat, but it is more than would otherwise be good for us. We do not need hot pepper sauce to give it relish. A week or two of this life makes a new man of one.

If any of you have never tried any of this life you are missing a great deal. It is the nearest to a sure cure for all ills that I know of.

Fortunately, we are located not very far from the seashore. One day last summer we accepted an invitation to take a spin with a friend to the seashore. We were advised to pack up a little lunch, as we might be delayed and get hungry before we arrived at our destination. Fortunately, the little "Buick 30" behaved very well and we arrived at the ocean in good time.

My wife insisted on my posing for some snapshots. Do I look as though business had been bad? I was thinking of the good things to eat in that suitcase, and not of the hard plugging necessary to make ends meet I had been experiencing during the few months prior to our trip. Since then, when things seemed to be going all wrong, I just break away and get a few days' recreation, and when I come



Gliding along old Millstone River.

back I not only find everything brighter, but just "go to it" with all the newly gained vitality, and "clean up."

When we are obliged to just drag along, without any heart or vitality left in us, I say it is the time to "scoot." Let the other fellow do the worrying. We will come back and pass him who has been dragging along, complaining that he can't afford a vacation, or some other weak excuse.

I don't mean to say that one should be a quitter. But one can't do his best when his vitality is low. Let him get some of it back, and he will be a big gainer in the end.

So don't forget that vacation this summer. Long or short, take it—you will never regret it. And you will be money ahead, too. I have tried both ways, and I find the whole man is worth more than twice as much as the half a man.



ANOTHER UNSIGNED LETTER

An Omaha, Neb., dentist, who apparently has not the courage to sign his own name, but signs the initials W. H. B., sends a protest against an article on page 223 of the April DENTAL DIGEST.

I presume that I could find out who W. H. B. is if I cared to go to sufficient trouble, but if he does not think it worth while to sign his name, I do not think it worth while to publish his letter—EDITOR.



"The Blue Hole." When I first saw the place I thought it the most beautiful spot in the world. I haven't changed my mind since. The water is the most heavenly blue imaginable and the shore is lined with magnificent "Royal" palms.

A WINTER VACATION IN EDEN.

By W. F. DAVIS, D.M.D., NEW YORK

As I opened my eyes and lazily gazed about I couldn't really make out where I was. Through the wide-open windows I saw an orange tree covered with fruit in various stages of ripeness. The tree was within easy reach of the window. In fact, I afterwards picked ripe oranges off the tree from the window, although it was a struggle. All the oranges within easy reach were unripe. The ripe fruit was hard to reach. That's just the way through life. Good things are hard to get. From the window beyond the orange tree, my eye rested on palms and a landscape of trees, flowers, and shrubs that I had never before seen outside greenhouses. The air was deliciously balmy. Just outside the window two negro women were talking. Their lazy, drawling tones were common to the tropics, but not to a New Englander. No; I wasn't in New England. That much was sure. It was too calm, too peaceful, for Yankeeland. Just at this point a diminutive negro girl brought in a small pot of coffee and some hot rolls on a tray, which she placed on a small table at the side of the bed. She was very small and very black, clothed with a

single garment. Her eyes were her most prominent feature. They seemed ready to pop out of her head. She ducked in a very funny little courtesy, and asked: "Buckra gem'man want hot water?" At my negative she ducked again and slipped through the door as noiselessly as she came in. No, emphatically, this wasn't New England. It was "The Garden of the Antilles."

Eight days before, my doctor told me: "You must stop. You must go away for a number of weeks—months would be better."

"But, Doctor, I don't want to go, just now. I have planned my usual fishing trip to Canada for the last of June."

"You'll have to change your plans. You notice I said you *must* stop. You can't wait till June. You must stop *now*. It's nervous prostration, and a bad case. If you wait till June, you will be a wreck."

"But, Doctor, where can one go for a winter vacation?"

"Go to a warmer climate; one calling for a long sea voyage." As I went out, he called through the closing door, "Try Jamaica!" I

didn't know anything about Jamaica, but the trip appealed to me and I knew the doctor was right. I didn't want to go, but knew that I must. My business was quickly arranged, and two days afterwards I left Boston on one of the United Fruit Company's steamers. It was about the coldest, the most uncomfortable March day imaginable, and Boston has made a reputation on March weather. In thirty-six hours we were in the Gulf Stream. From that time on the voyage was like a luxurious dream. The steamer was going down to bring back fruit, had little cargo, and was fitted to carry only a few passengers. Everybody became ac-



A Jamaica Policeman.
Dark but pleasant.



"The Captain's Cave." Entered through a hole in the ground above. The sand is almost snow white, soft and perfectly clean.



"Going to Market." These baskets are loaded with yams, bread fruit, sugar cane and other produce. Some of them are very heavy. As much as a man would care to lift.

quainted with everyone else; the ocean was calm and heavenly blue, the air was balmy. One could not realize that it was March in New England or cold and stormy anywhere. The days were spent in watching the flying fish, and the porpoises as they played about the bows of the boat; a game of shuffleboard with the captain was a real excitement; mealtime was an occasion. The cooking was so good that we all requested the captain to be sure to save the cook in case the boat should be wrecked. No words can describe the beauty of the nights on the water. The moon was larger and more luminous, the myriads of stars were brighter, and the ocean rippled away from the bows of the boat with a beautiful phosphorescent glow. All worries and troubles faded away under such influences. I felt like a new man in a new world. It was a lovely, leisurely trip. The boat, the captain and the crew—especially the cook—were very satisfactory.



A Jamaica Auto.
"Motor trouble" is not unusual.



For a few pennies a boy will climb a coconut palm and cut off one or more nuts for you. It's no easy climb.

Everything was congenial, but it had to come to an end. After five and a half days we landed at Port Antonio. This brings me back to where I was looking out of my window at the orange tree. The next few weeks were weeks of unalloyed pleasure and complete rest. Nobody hurries, and—as far as I could learn—nobody worries in Jamaica. Why should they? I do not think a person could by any possibility starve, if he availed himself of the great variety of fruits and vegetables that nature has so bountifully provided. Why worry? And why hurry? If a man should be seen running, I think the inhabitants would pronounce him insane.

What shall I say about the island itself? It is called "The Garden of the Antilles." One might call it "The Garden of Eden" and no more than do it justice, except that there are no snakes in the island. Years ago the snakes were so many and so troublesome that the mongoose was imported from India. The mongoose did his work thoroughly. There are no snakes in Jamaica to-day. But it might be "The Garden of Eden," just the same. It is the ideal place for a winter vacation, because the climate is almost perfection; because everything is novel and so entirely different from anything in the North; because there is no hustle, no bustling about, one has complete rest; because the people are nice and obliging. Nearly all are negroes of different shades, from boarding-house-coffee color to a deep black, but they are well educated and courteous; because the scenery is beautiful beyond words to describe, and because Nature has been extravagantly prodigal in the profusion of fruits and foliage. She

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What shall I say about the island



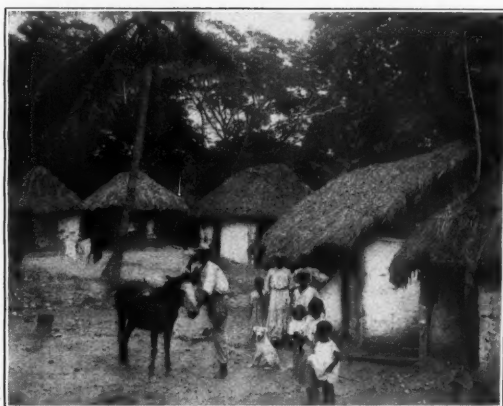
Not much like our "Mogul" engines. It's the best they have. Makes a speed of about 15 miles an hour, I should judge.



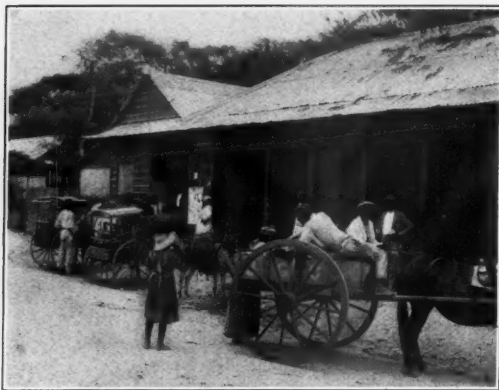
Wouldn't you get sentimental if you were walking down this road, with your best girl, some balmy moonlight evening?

has showered into this tropical garden. Lastly, because it is not an expensive trip, considering the distance.

Did you ever see nutmegs growing on the tree? I never did till I saw them here. So with numberless other fruits and vegetable products. Not only can you pick ripe oranges and bananas, but you can gather other delicious fruits, some of which you never saw before—mangoes, guavas, custard apples, star apples, etc., etc. You can get a perfectly ripened pineapple, cut it open, and eat the pulp with a spoon. No sugar is needed. You can give a darkey boy two or three pennies and he will climb a tall coconut palm, get you a coconut, cut off the top, and you have a pleasant drink of coconut water.



A typical Jamaica negro hamlet. The Jamaica negroes are, I believe, the happiest class of people in the world.



Don't make any mistake about this picture. It is a hotel and a store. It also shows some of the carts that peddle from house to house.

You will notice that teams turn to the left instead of the right when they meet; you will see the women carrying all burdens on their heads. I have seen a big negro woman with a small can of condensed milk nicely balanced on her head, and immediately after another woman with an immense market basket

loaded with bananas, yams, bread fruit, etc., on her head.

In Jamaica you can get out of the fashionable ruck of tourists. The island is so large that you can wander about at your own sweet will. Keep out of the large cities. Travel about the interior. You will continually see new and interesting places, and everywhere beautiful scenery and Nature's prodigality.

Yes, I know you think "a winter vacation" not practicable. It is practicable, if you make it so. Because you have always taken a vacation in the summer is no good reason why you should continue to do so. If you dread northern winters as much I do, you'll be extremely well pleased to get out of one.

If you go to Jamaica, you will say it is the best vacation you ever had and that it was of the most real benefit to you. About the first week in February is the best time to go. I could write pages and pages and pages about this trip, and show you scores more pictures,* but they won't let me. They say, "There are others."



A laborer's "Wattle and Thatch" hut. The sides made of bamboo and the top thatched. The only cost is labor. Nothing for materials.

* The author is pleased to acknowledge the kindness of the United Fruit Company in loaning him photographs for several of the illustrations.

BACK TO NATURE

By PERCY NORMAN WILLIAMS, D.D.S., NEW YORK.

Blessed be the man who can fully comprehend and assimilate the meaning of that magical word Vacation.

I feel sorry for the man who can't or won't understand it. I also pity the man who looks upon it as only a change of scene for a couple of weeks each year. With me it is an all-the-year-round affair. Five and one-half months of anticipation, one month of realization, and five and one-half months of retrospection.

I was once associated with a man who didn't believe in vacations. He told me he didn't need it. Hadn't had one in twenty years, he said. If you had seen him in daily life you wouldn't have doubted it. He was a poor stick! Never knew the real joy of living. No surplus energy, a rank pessimist with a chronic grouch, hopelessly in a rut.

He is now far beyond and away from the point where he could enjoy a vacation, even though he could be persuaded that business would not go to the dogs if he went away for a few days.

It seems to be one of Nature's immutable laws that whatsoever a man soweth, that shall he reap. This surely is applicable to the physical as well as the moral. Let us not be deceived in our attitude toward this vacation question and reap the results of our folly and indifference in our advancing years, for "Of all sad words of tongue or pen, the saddest are these, It might have been." Spring showers and budding trees mean nothing to the slave who never can leave his work. These office walls give off no odors of the honeysuckle and anemone. That rumble in the street below doesn't resemble the call of the thrush or the song of the ground sparrow.

You poor office slave! Take a walk out into the country on one



Mona II.



Sheldrake Point

of these warm spring evenings. Let God's pure air fan you. Get the breath of the wild flowers, listen to the frogs sing. Take off your hat, hold up your hand, and solemnly swear that if it is the last thing you do on this earth you will take a vacation this summer.

Spring to me is the harbinger of glorious vacation days, and vacation days stimulate anticipation, which means preparation. So now, most any evening, if you will drop around to boathouse 84 on the inlet you will find the vacation crank "scraping and painting her bottom." There, the secret is out, and I might as well tell you all about her.

She is a thirty-footer, with a five-foot beam, twelve horse-power engine, canopy top; speed, ten miles per hour, and her name is Mona II.

She it was who took the other two-thirds of the family and myself on a three-hundred-mile cruise through the Erie Canal and lakes of central New York, which description is the important part of this vacation epistle. With the approaching warm days in March which told us spring was on the way, we began to discuss and outline plans for the coming summer, with the result that we decided on the above-mentioned trip.

The keen anticipation of what delights this outing would bring us kept us in high spirits and we spent many enjoyable evenings discussing our plans and arranging our outfit. As we wanted and needed real rest and recuperation, we wished to avoid, in so far as possible, "roughing it," and we realized that much of the charm of the trip would be to have all possible conveniences and freedom from drudgery and hardship. Believing we could not rest without refreshing sleep, we paid particular attention to the construction of sleeping quarters. A piece of canvas suspended between the two sides of the boat, with a pike pole through the center, made two very comfortable cots. This

could be removed and stored away during the day. We took along an alcohol stove with which to do cooking on the boat, and a camp stove to use when going ashore. Cooking utensils were stored away in the lockers, a hammock, pillows, camera, rifle, cigars, candy, and plenty of reading matter completed our outfit.

At last the long-looked for day arrived, a final inspection of engine, tiller, anchor, ropes, etc., and we cut her loose at 5 P.M. and stuck her nose into a stiff north wind and waves on Cayuga Lake. Vacation, with all its delights and thrills, was upon us. The wind went down with the sun and the lake became quiet. Now at last we were close to God's footstool. We crept along under the picturesque west shore, and at 7 P.M. came into a beautiful little bay behind Sheldrake Point. We went ashore and built a fire, and with appetites like starved wolves we "went to it."

After a brief discussion of the plans for the following day we threw out a stern line and pulled the bow away from the shore a few feet.

Happy and contented beyond words we turned in, and as we went to sleep the gentle splashing of the waves against the stern was music to our ears.

We arose at 6 A.M., took a plunge into the lake, and after a breakfast on board, weighed anchor and proceeded thirty miles to the north end of the lake to the entrance of Cayuga Canal. The lock tender's favor was won with cigars that he might let the water in slowly, and we entered the lock and were raised fifteen feet to the first level. Running further north nine miles we entered the Erie Canal at Montezuma. Here, after passing through another lock, we turned east toward Syracuse. Ten miles further we drew up alongside a dock in the village of Weedsport. Securing supplies at a grocery, we went along the canal to the outskirts of the village and tied up to the Heel-Path, the name given to that bank of the canal on the opposite side from which the mules tow the boats. Here we went ashore and cooked a hearty meal. As we had spent most of the day on board we were very hungry. We had covered forty-nine miles that day, going ashore for one hour at noon. We originally planned to run about fifty miles per day, so we "turned in" that night feeling well satisfied with our first day on the canal.

We entered Syracuse the next forenoon and interrupted traffic on the main street as we passed through the lift bridge. We next passed through a lock and entered the long level of forty miles between Syracuse and Utica. We rested overnight in Canastota, where the famous Beechnut Brand products are manufactured. We

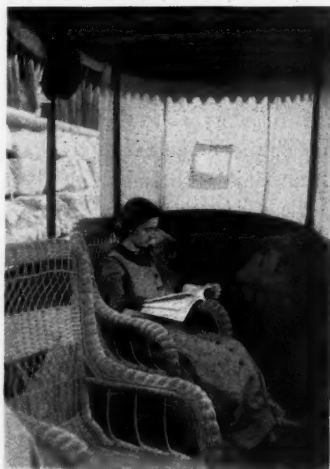


Taughannoek Falls on Cayuga Lake—291 ft. high.

toward Utica. For the next ten miles we passed through wonderfully fertile country, with beautiful hills rising south from the canal. Fifteen miles from Utica we saw the battlefield of Oriscany, on which we observed a monument erected to the memory of those who died in that historic struggle. Entering Utica, we passed through locks and lift bridges to five miles south, where we met with the first serious interruption of our trip. As we were entering the lock at Ilion, the keeper raised his hand, signalling for us to stop. He explained that the bank in the level below had crumbled away and all water in that level had run out into the surrounding country. Taking a trolley to a point where the bank went out, I learned from the state engineer that it would take at least a week to repair the damage. We then decided we would have to abandon the rest of the journey by water. We returned back on the canal two miles to the home of a farmer, with whom we made arrangements to look after our outfit, and

made friends with a watchman at one of the canning factories and secured some large ears of sweet corn. Later we roasted them over a fire with lamb chops and sweet potatoes. This being Saturday evening, we went to the "movies," shopped, laying in a supply of gasoline.

We arose late Sunday morning, attended church, and went to a restaurant for dinner, after which we weighed anchor and proceeded



Cabin of Mona H.

proceeded by trolley to Saratoga. Here we visited the Springs, looked over points of interest in this once famous gambling resort, and boarded a train for Fort Ann. We remained a week here with friends, spending our time fishing, hunting, and making photographs. We returned to our farmer friend and found our boat had been well cared for. Rewarding him for the great kindness shown us, we "cranked her up" and pointed the bow homeward. Four days brought us once more onto the surface of fair Cayuga. One day was spent here fishing, with excellent results. We reached home without mishap or any accident to mar our pleasure. With a good collection of photographs, which have since been a real joy to us; with sunburned faces, additional weight, and surplus energy to last indefinitely, we never recall the incidents of that trip without a thrill and a longing to do it again.

COSTS IN AUTOMOBILING

The costs in automobiling are something like those involved in conducting practice, much greater than one realizes until one keeps accurate record. The following experience may interest many who contemplate buying a car.

Last fall, when I began to break under the strain of long-continued application, I bought a little runabout to drive from my home in New Rochelle to the office in New York, a distance of eighteen miles. I bought it particularly because my touring car is too expensive for such use.

I have just sold it (April 8th), after driving it 4,000 miles. I did not keep any record of oil or gasoline bills, because I buy both in quantities and used for both cars out of the same tanks.

Purchase price of car	\$450.00
Licenses from September to date, parts of two years....	7.50
Extra shoe, two inner tubes and some vulcanizing.....	20.47
Skid chains and tools	5.00
Insurance, fire and theft, collision, liability	53.00
Speedometer	15.00
New leaves in springs and other repair bills	37.85
Gasoline strainer in line	1.40
Prestolite tank exchanges	2.50
Hood cover for winter	4.00
Glycerine and alcohol	4.00
Garage, 2½ months in winter	25.00
	<hr/>
	\$625.72
Less price for which I sold everything	256.50
Net cash loss—4,000 miles, six months' driving.....	\$369.22

All except the 2½ months of snowy weather I had no garage charges.

G. W. C.

A TALK ABOUT BUSINESS BUILDING

BY A. F. SHELDON, CHICAGO, ILL.

NATURAL LAWS.

Great men and great institutions reflect nature's laws. The astronomer banks on this law. He can focus his telescope on a great point in the heavens and rest with faith knowing the heavenly body scheduled to appear at a certain time will appear, because he knows nature's law of being on time.

Some seem to try to distinguish between nature and human nature. The human being is the apex, the pinnacle of nature, her highest creation. Man cannot violate natural law with impunity. If he does, he must pay the penalty in the subtraction from the otherwise possible totality of his success.

The penalty may be very slight. It sometimes is so slight that it is not noticed. The penalty is paid, however.

Any one who violates Natural Law in the business world to any degree is less successful than he otherwise would have been.

Violate enough of the laws of health, and one pays the penalty in death.

Violate enough of the laws of success and one pays the penalty in failure.

Many obey the natural laws of success knowingly, consciously.

Many work in harmony with many of them unconsciously.

Millions violate many natural laws of success; some consciously, many more unconsciously.

In number the natural laws of success are many, but they can be boiled down to four injunctions.

The first of these four were given by Socrates several thousand years ago, when he said, "Man, know thyself."

Add to this Socratic injunction these words, "and how to develop your success qualities," and the first of the four injunctions is complete.

SELF KNOWLEDGE.

We are talking business and how to build it, and we shall discuss the physical and the mental man. As such, he is a body plus a mind.

As to the body, this brief series of talks does not permit of an extensive analysis from the physiologist's point of view nor does it permit of a very long discussion of health laws.



"Know the laws of keeping well."

No one can obey the natural laws of success in the business world unless he takes care of his body.

Thousands disobey enough natural laws at the breakfast table every morning to throw them out of harmony with many other natural laws of success all day long.

Millions of men and women are breathing backwards—eat too much and not properly chewing that which they eat.

The cigarette fiend or the man who is constantly frequenting the bar for “bracers” cannot build or possess the physical endurance or the nerves to stand the strain and stress of modern business.

Millions of men and women are breathing backwards—which is only half breathing at best.

Watch the animal or the little baby before it is afflicted with civilization and you will note that when it inhales the abdomen expands; when it exhales the abdomen contracts.

Watch your own, for it may be going just the other way. If so you are breathing backwards.

This is an unnatural breath—a bad habit against the laws of health, therefore a violation of natural law in business.

Know the laws of keeping well, then follow the laws and the health that gives endurance and success will be yours.

However great your ability, however high your reputation for reliability, however strong your will to do things, except these splendid powers are backed by health, you will never be able to win complete success.

If you have to contend with the “gnawing rat of dyspepsia” or lungs so weak that every draught brings a cold, you are handicapped.

It is said that a sick stomach helped to lose Napoleon the battle of Waterloo.

Ill health is a cause of pessimism—and it is not the pessimist that wins in the great commercial world to-day, but the optimist.

The man who radiates sunshine, whose handshake is warm and cheerful, whose voice has the ring of satisfaction, who sees the “silver lining” within the clouds—he is the man you want to buy from; he is the promoter, the man whose vibration is so high that he “must be up and doing.”

If you would know the real reason this man is so happy—is so inspiring—it is because he is so well. His physical machinery is working in order; his lungs, his stomach, his teeth are all right.

He wears the armor of perfect health, that is why he is so well prepared to fight the battle of life.



Energy comes from health, and without energy what business man can hope to succeed?

Endurance comes from health and without endurance what business man can hope to succeed?

Can the carpenter build without tools? He must have all the tools he needs for his craft, or he will be a bungler and a butcher. He can't saw with a hammer or chop with a plane. He must have the tool for the work if he is to be a master builder.

Would you be a Master Business-BUILDER? Then you must have the tools for your work—and one of the most important tools is a healthy body.

To keep his health is the sacred duty of every man who would succeed. Nature offers you the means; fresh air to breathe, clean water to drink, to bathe in, nourishing food to eat. Make your choice wisely.

One of health's chief laws is exercise—use.

Use your muscles and your muscles become strong; use your lungs and your lungs become strong.

Abuse or neglect your muscles and your strength departs; neglect your lungs—don't breathe properly—and tuberculosis may be the result.

The laws of health are so simple; nourishment and use, that it looks as if we should learn to obey them, since they mean so much in the battle of life.

"One of health's chief laws is exercise."



Is not the man mad who in the "money-chase" destroys his body? Logic says he is; for money, after all, is only purchasing power in the commercial world, and the things worth while that money can buy are the things worth while to the man only.

To the sick man "the earth and the fulness thereof" means nothing.

One cause of the sick man's failure is his terrible selfishness; the man who is compelled to think continually of "his own ills" is not the man to give the world service.

To be able to give the world real service you must be able to forget yourself and think of your work only.

Only the well man can love his work, and only the man who loves his work can render efficient service, and

only the man who can render efficient service can be a business-builder, and only the man who can be a business-builder can be a success in the business world.

Since you are in the business world you want to become a success, and to get the reward of commercial success—money.

That is a legitimate ambition. You should be proud of it.

The man who has no desire to make money is unwise.

But you are an ambitious man, anxious to attain or retain your success.

The first thing then to do is, be healthy. If you are so already, remain so. If not, follow the laws of health, and attain it.

Remember, health is the first step in the attainment of success.—*Selected.*



Little sand diggers.

THE AMERICAN PHYSIQUE IMPROVING

Frank J. Born, M.D., medical examiner at Yale University, says that the younger generation of to-day surpasses its parents. Yale men have been found to have a greater power of growth, and the average weight of the senior class is 152.3 pounds, as against 136.1 pounds for the senior class in 1864, and as against 140 pounds for an average of 1,000 New England volunteers in the Civil War, 1864. Prof. Born finds that the gymnasium worker gains 19 pounds; 2 inches in shoulder breadth, 4 inches in chest girth and 38 cubic inches in lung capacity during the gymnasium work of the winter months, while the student who does not exercise gains 4 pounds, 2/10 of an inch in shoulder breadth, 1 inch in chest girth and 18 cubic inches in lung capacity.—*Physical Culture.*



IN CAR AND TENT

BY GEORGE WOOD CLAPP, D.D.S., NEW YORK.

When I was just a lad, I went camping one summer. And now that my oldest boy can read camping stories in the magazines, he is just as anxious to go as any healthy boy would naturally be. I must say that his talk about the pleasures of tent life found a ready ear on his father's part, for I get so much of hotel life that it seemed likely to promise a pleasant change.

So we spent some of the spring evenings poring over the catalogs of the supply houses and checking up the articles we wanted. At last we had the list complete and started to buy the articles. We found our list to be a little like Mark Twain's house.

Mark Twain decided to build a home, which the contractors had agreed to erect for a certain sum. He had heard much about the bills for extras which always accompany house building, so he vowed long and loud that this house should cost the appointed \$20,000, and no more. Long after the house had been completed, he was asked by an

intimate friend if the house had cost that sum. Leading the friend into a secluded corner, he put his mouth close to his friend's ear and whispered, "Half of it did." And so a little more than half of our list cost the sum we had planned.

When we were free to leave home, we packed all the supplies into the automobile, for this was to be a tenting trip from the start. We had duffle bags, with the clothes on the front fenders; the tent and cooking outfit on the left running board; the folding beds, folding table, folding chairs, and grub supplies in the tonneau. Then we put in four people. In the rear sat the mother and Eldridge, the boy, and in the front, daddy and the driver.

It took until afternoon to get all this material stowed the first time, since we had to find out how to do it. We left home, New Rochelle, at about three o'clock, bound for the White Mountains.

You know how pride goes before a fall. It did with us. The baggage was well stowed, the Haynes was running like a watch, and the roads were pretty good. We did from twenty-five to thirty-five miles an hour, and that proved our undoing. Just as we were entering New Haven, a new-fangled rim that had been put on the rear wheel gave way, the tire flew off the rim, ran ahead of the car, which, of course, began to drag, and struck against the fence with a force that would have harmed any person it struck. We stopped for repairs. When they were completed it was nearly dark, so we drove back to a high hill just west of the city and obtained permission to pitch our tent in an orchard.

On the way back we located a nice, clean dairy, and procured a couple of bottles of milk with rich cream on the tops. The tent was quickly pitched, the cooking outfit, tables, chairs, etc., were gotten into working order, and before long we had supper. There was plenty of wood about, so we built an open fire, made a smudge to



Tenting outfit aboard.

drive away insects, and sat out in the night air till it seemed to us quite late, but was really only 9 P.M. Fortunately, we had taken especial pains to purchase a tent that was mosquito-proof, so we slept undisturbed by these live boring machines every night on the trip.



"The head cook."

We were wakened early by the sun, and by the time we should ordinarily have finished breakfast at home, everything was ready for the day's journey. During the day we drove over the really fine Connecticut roads, stopping now and then to enjoy a particularly fine scene or to purchase some of the good things to eat with which the stores seemed filled. The noonday lunch was taken alongside the road under the shade of a big tree. Many an automobile passing

waved us friendly greetings. Some of them had big parcels of baggage tied on the cars, perhaps camping outfits like ours.

We had learned by this time the wisdom of keeping the two milk pails always within easy reach. So, after passing through Worcester, Mass., we stopped at a dairy, filled the pails with milk, and drove to the side of a lake a few miles away. Here we found a camping spot on a hill, near a spring. And here, when the table had been set, we cooked a delicious porterhouse steak purchased in the last town.

One of the beauties of camping is that one retires early and rises early. Next morning we got out the fishing tackle, with the thought of catching some of the fish said to be plentiful in the adjoining lake. But we had no boat and the lake was full of weeds and stumps, so we gave that up, and started northward. Before many hours we were on the beautiful Merrimac River Boulevard, and after a really enjoyable day's drive, reached Weirs, N. H., in the late afternoon. Here we found a camping place on the farm of a Mr. Jones. During the evening our host came over to sit beside our fire and visit. He told us interesting stories about city people, and particularly New Yorkers. I



The "Perseverance."

couldn't help laughing at them and had to admit that his not very flattering views were justified by his experiences.

I found out also why camping parties are not held in very high esteem and welcomed with open arms, and why automobilists are not well thought of. It is strictly our own fault. Some of us who arrive at the possession of a car seem to think that it conveys possession of a goodly share of the earth with it and the privilege of trampling on the rights of others. We have no right to be careless of the rights of those who drive horses, especially women. Nor, if we get into a mudhole, are we justified in tearing down a fence to get ourselves out, and then drive off, leaving the rails just where we used them. I wish that each of us who has a car might take just a little extra pains to show consideration to those who have not. It would soon breed a different feeling toward us.

Next morning we moved onward and, through the courtesy of a very fine old gentleman, we located a charming camping place on the shores of the Lake Winnepesaukee. Here, in a grove, we pitched our tent and prepared to make a stay. There was a fine beach, with shallow water to permit wading, and a little wharf for boats. Adjoining farms furnished fresh eggs, milk, butter, strawberries, etc. Eldridge, who has lived on city eggs, at first refused to eat the fresh eggs, saying they didn't taste right. The near-by town boasted an excellent bakery.

To anyone who is as fond of the water as I am, the opportunity to hire a good motor boat is a great attraction. Mr. Buffum, at Winnepesaukee Pier, makes a business of renting boats, and from him we chartered an excellent family motor boat at \$12.50 per week. With this we cruised about the lake at will, and thus spent many a pleasant hour.

Eldridge and I found a good mill in a near-by town, and here I shaped out a couple of toy sail-



"A dream of joy."



"Eldridge bathing."

boats for him, and we rigged them for use on the lake. His mother made the sails. He sat close beside her while she did this, and said, "Daddy, take a picture of this and call it 'A Dream of Joy,' and make an arrow pointing to me."

Here we loafed and I forgot about the *Digest* and subscriptions and office costs and articulation. We went to bed early and rose early, and sailed and swam and fished and

took naps, as the notion struck us. Here we grew strong again. We had a much better time than we should have had in a hotel.

At last the time of departure came. We had stayed as long as we could. One morning we packed early and started for New York by way of Bretton Woods. We should have spent a day or so here, but when we got into the mountains it was so cold and rainy that we had to put on oilskins to keep warm and dry. Such conditions did not invite us to stop, and we drove rapidly all day, covering 156 miles, in spite of our heavy load. We pitched tent late that night and got away rather late the next day. We drove very hard, the mother being anxious to get home. At midnight we reached New Rochelle, having covered 256 miles that day, or 412 miles in two days. This is too hard driving and was the only incident in the whole trip that I regret. The car ran beautifully all the way.

We were gone about seventeen days. We saw some of the finest scenery in eastern America, the drive down the Connecticut River valley being especially fine. We had lived out of doors. We were much better physically than when we started. And we had the camping outfit intact for another trip.

One can buy a good outfit for a family of four, make such a trip, have the outfit as good as new for another time, at no greater expense than would be involved in stopping at moderate-priced hotels.

Only be sure to get a water-proof and mosquito-proof tent and a stove, that is of the same height from the ground as an ordinary kitchen stove.



"A little friend we met."

SOCIETY NOTICES

NATIONAL DENTAL ASSOCIATION MEETING

Owing to lack of space in this department, the program of this meeting and the invitation to attend are published on pages 12 and 13 of the advertising section.

RAILWAY PASSENGER RATES TO AND FROM ROCHESTER, N. Y.

(July 7-10, 1914.)

1. The railways of the Trunk Line Association, covering New York State (east of and including Buffalo, Niagara Falls, and Salamanca), New Jersey, Pennsylvania (east of and including Erie, Oil City, and Pittsburgh), Delaware, Maryland, District of Columbia, Virginia, and West Virginia (east of and including Wheeling, Parkersburg, and Huntington) have given an open rate of two cents per mile in each direction in their respective territories with the minimum excursion rate of \$1.

Tickets to be sold are good going July 5 to 7, 1914, and returning to reach original starting point not later than July 13th.

2. The New England Passenger Association covering the railways of New England also grant the above privileges and limitations with tickets from their principal stations. The agent at other stations will require not less than 48 hours' notice to procure fares and tickets obtainable from the General Passenger Department of the railroads interested.

3. Eastern Canadian Passenger Association.—Canada (east of and including Port Arthur, Sault Ste. Marie, and St. Clair and Detroit rivers) declined granting reduced fares.

4. Central Passenger Association—Territory west of Buffalo, Pittsburgh, Wheeling, Parkersburg, and Huntington, to and including Chicago and St. Louis and north of the Ohio River, including Cincinnati, Louisville and Cairo—have granted a rate of two cents per mile in each direction added to the tender received from Trunk Lines, through fares, however, not to be higher than the 30-day summer tourist fares to Buffalo, N. Y., plus tender covered.

Signature form of tickets to be sold on July 4th-5th-6th with return limit to reach starting point not later than midnight of July 14, 1914, except in border territory common to the Trunk Lines, selling dates July 5th-6th-7th with return limit of July 13th. Your committee suggests conferring with local agent for excursion rate with longer limit, if desired.

5. Southeastern Passenger Association.—Territory south of Ohio and Potomac and east of Mississippi rivers—declined granting a concession in rates and suggest that the summer excursion tickets will be on sale daily before the time of meeting from the principal stations in their territory, reaching Buffalo, Niagara Falls and other points contiguous to Rochester.

6. Western Passenger Association—Territory west of Chicago, Peoria, and St. Louis to and including Denver, Colo., and Cheyenne, Wyo., state that the summer tourist fares to Eastern sections will be available from principal points in their territory. The general basis of fares, two cents per mile in each direction to their Eastern gateways added to the fares over their lines.

Confer with local ticket agents.

7. Southwestern Passenger Association—Territory southwest of St. Louis, including Texas, Arkansas, Oklahoma, Missouri (south of Missouri River) and Louisiana (west of Mississippi River) and Mexico, suggest that the summer excursion rates are practically two cents per mile in each direction. Tickets on sale daily May 15th to September 30th, limited to return October 31st.

Confer with local agent.

8. The territory covered by the Trans-Continental Passenger Association—Pacific coast and other far western territory not otherwise covered by the above associations, suggest that the summer excursion rate, \$72.50, is as low as can be granted from San Francisco to Chicago and return. Sale dates for tickets June 29-30th, and July 2d-3d.

Excursion tickets from Oregon and Washington to Chicago, daily during June and July.

9. Convenient trains to Rochester.	
Lv. St. Louis, Mo., Big Four Route	11.30 A.M.
Lv. Indianapolis, Ind., Big Four Route	5.50 P.M.
Lv. Cincinnati, Ohio, Big Four Route	6.05 P.M.
Lv. Dayton, Ohio, Big Four Route	7.45 P.M.
Lv. Springfield, Ohio, Big Four Route	8.30 P.M.
Lv. Columbus, Ohio, Big Four Route	9.55 P.M.
Ar. Rochester, N. Y., N. Y. Central R. R.	9.21 A.M.

Lv. Chicago, Ill., Lake Shore & Mich. So. Ry.....	5.30 P.M.
Lv. Toledo, Ohio, Lake Shore & Mich. So. Ry.....	11.15 P.M.
Ar. Rochester, N. Y., N. Y. Central R. R.	8.45 A.M.

Lv. Chicago, Ill., Michigan Central R. R.	5.40 P.M.
Lv. Grand Rapids, Mich., Michigan Central R. R.	5.10 P.M.
Ar. Rochester, N. Y., N. Y. Central R. R.	9.21 A.M.

Parlor Cars and Sleepers over these lines reach Rochester via N. Y. Central.
Through tickets to New York permit stopover of ten days at Rochester by depositing ticket at Station Ticket Office immediately upon arrival. A convenience to those joining the European Tour or visiting the Metropolis.

10. From New York to Rochester—Excursion tickets sold July 5th-7th, return by July 13th.

Lv. New York, N. Y., New York Central	8.30 A.M., 9.34 P.M., 11.35 P.M.
Ar. Rochester, N. Y., New York Central	4.05 P.M., 6.30 A.M., 8.13 A.M.
Rate to Rochester—excursion both directions	\$14.45

Lv. New York, N. Y., West Shore R. R.	8.35 A.M., 7.20 P.M.
Ar. Rochester, N. Y., West Shore R. R.	6.40 P.M., 5.12 A.M.
Rate to Rochester—excursion both directions	\$13.40

Lv. New York, N. Y., Lehigh Valley R. R.....	9.50 A.M., 11.50 A.M., 8.50 P.M.
Ar. Rochester, N. Y., Lehigh Valley R. R.....	9.44 P.M., 9.44 P.M., 8.25 A.M.
Rate to Rochester—excursion both directions.....	\$13.40
For ten or more people, traveling on one ticket.....	\$13.20
Black Diamond Express (11.50 A.M.) fare \$13.40—Pullman seat....	\$1.75

Your committee suggests that members confer with the local railway agents with reference to excursion rates to Rochester or nearby points with stopover privileges.

NATIONAL DENTAL ASSOCIATION COMMITTEE ON TRANSPORTATION.

V. H. JACKSON, New York, *Chairman*.
H. F. HOFFMAN, Denver, Colo.
L. P. DOTTERER, Charleston, S. C.
T. S. SMITH, Palo Alto, Cal.
WILLIAM W. BELCHER, Rochester, N. Y.

XI PSI PHI FRATERNITY NATIONAL ALUMNI ASSOCIATION ANNUAL MEETING

Good Fellowship, not Policies, annual dinner at Rochester, July 6, in the large Banquet Hall of the Hotel Seneca, at 6 P.M. Annual Business Session will immediately follow the banquet. Membership Committee kindly get in touch with Dr. C. X. Markey, 1436 People's Gas Building, Chicago, Ill.

SIXTH INTERNATIONAL DENTAL CONGRESS (LONDON).

SECTION X: DENTAL EDUCATION.

The subjects for report to be followed by discussion are:

- (1) The Teaching of Bacteriology for Dental Students: Methods of Teaching; Extent of Teaching. Reporters—Mr. J. Howard Mummery and _____.
- (2) A Practical Synopsis of Medical and Surgical Teaching for Dental Students. Reporter—Dr. Godon.
- (3) First Principles in Practical Teaching. Reporter—Dr. Gaddes.
- (4) Methods of Teaching Orthodontics to Dental Students. Reporters—Dr. Guilford and Dr. Martinier.

The mornings of the 5th, 6th and 7th of August to be devoted to Reports, and the afternoons to Independent Papers.

The Committee of the Section is desirous of obtaining names of gentlemen willing to discuss the above subjects, or to read papers on "Dental Education."

F. BOCQUET BULL, Guy's Hospital, London, S. E.,

GEORGE SHEPPARD, 59 Merrion Square, Dublin,

Hon. Secretaries.

FUTURE EVENTS

- June 3-5, 1914.—Massachusetts Board of Registration Meeting, held in Boston, Mass.—G. E. MITCHELL, Haverhill, Mass., *Secretary*.
- June 4-6—Southern Branch of the National Dental Association Meeting, held in Atlanta, Ga.—JESSE L. WILLIAMS, *Secretary*.
- June 4-6, 1914—Thirty-sixth Annual Meeting of Louisiana State Dental Society, held at Baton Rouge, La.—E. B. DUCASSE, Maison Blanche, *Secretary*.
- June 4-6—The Fifty-seventh Annual Meeting of the Northern Ohio Dental Association will take place at the Wigmore Coliseum, Cleveland, O.—C. D. PECK, *Secretary*.
- June 4-6, 1914—Arkansas State Dental Society, held in Little Rock.—CLARENCE L. HUNT, *Secretary*.
- June 5-6, 1914—Annual Meeting of The Upper Peninsula Dental Society, held at Escanaba, Mich.—G. A. COTTON, *Secretary-Treasurer*.
- June 8-9, 1914—Arkansas State Board of Dental Examiners, held at the Marion Hotel, Little Rock, Ark.—I. M. STERNBERG, *Secretary*.
- June 8-10, 1914—Missouri State Board of Dental Examiners, held at Jefferson City, Mo.—GEORGE E. HAIGH, *Secretary*.
- June 10-13, 1914—Pennsylvania State Board of Dental Examiners, held in Philadelphia and Pittsburgh.—ALEXANDER H. REYNOLDS, 4630 Chester Avenue, Philadelphia, Pa., *Secretary*.
- June 11, 1914—Semi-Annual Meeting Illinois State Board Dental Examiners.—O. H. SEIFERT, 305 Ridgely Bank Bldg., Springfield, Ill., *Secretary*.
- June 11-12, 1914—Meeting of the Maryland State Dental Association, held in Odd Fellows Temple, Saratoga and Cathedral streets, Baltimore, Md.—C. D. SADLER, *Secretary*.
- June 11-13, 1914—The Montana State Dental Society Meeting, held in Great Falls, Mont.—F. W. ADAMS, Billings, Mont., *Secretary*.
- June 12, 1914—South Carolina State Board of Dental Examiners, Chick Springs, S. C.—R. L. SPENCER, *Secretary*.
- June 15-19, 1914—Indiana State Board of Dental Examiners' Meeting, held in State House, Indianapolis.—F. R. HENSHAW, *Secretary*.

- June 17-19, 1914—New Hampshire State Dental Society, Annual Meeting, held at New Hotel Weirs, Weirs, N. H.—L. I. MOULTON, *Secretary*.
- June 17-19, 1914—South Carolina State Dental Association Meeting, Chick Springs Hotel, Chick Springs. Clinic in charge of J. Murray Hair, Greenville, S. C.—WILLIAM B. SIMMONS, *Secretary*.
- June 18-19, 1914—Meeting of Dental Commissioners of Connecticut for examining applicants for license to practise dentistry.—EDWARD EBERLE, 902 Main Street, Hartford, Conn., *Secretary*.
- June 19-20, 1914—Utah State Dental Society Meeting, held at Logan, Utah.—J. P. STEWART, First National Bank Building, Logan, Utah, *Secretary*.
- June 22, 1914—Wisconsin State Board of Dental Examiners, held at Marquette University, Milwaukee, Wis.—W. T. HARDY, *Secretary*.
- June 22-24, 1914—Oregon State Dental Association Meeting, held at the North Pacific College Building, Portland, Ore.—C. M. HARRISON, *Secretary*.
- June 23-24, 1914—A meeting of the Maine Board of Dental Examiners will be held at the State House, Augusta, Me.
- June 23-25, 1914—Mississippi Dental Association Meeting, held at Vicksburg, Miss.—M. B. VARNADO, Osyka, Miss., *Secretary*.
- June 24-27, 1914—North Carolina Dental Society Meeting, held at Hendersonville, N. C.—J. MARTIN FLEMING, Raleigh, N. C., *Secretary*.
- June 25-27, 1914—Annual Meeting of Tennessee State Dental Association, held at Chattanooga, Tenn.—C. O. RHEA, *Secretary*.
- June 25-27, 1914—Forty-ninth Annual Meeting of Maine Dental Society, held at the New Augusta House, Augusta, Me.—I. E. PENDLETON, *Secretary*.
- June 25-27, 1914—Colorado State Dental Association Meeting, held at Manitou, Colo.—EARL W. SPENCER, Pueblo, Colo., *Secretary*.
- June 26, 27, 29 and 30, 1914—Florida State Board of Dental Examiners will meet in Jacksonville, Fla.—W. G. MASON, *Secretary*.
- June 29, 1914—Vermont Board of Dental Examiners, held at State House, Montpelier, Vt.—GEO. F. CHENEY, *Secretary*.
- June 29-30, July 1, 1914—New Jersey State Board of Dental Examiners, Annual Meeting, held in the Assembly Chamber of State House, Trenton, N. J.—ALPHONSO IRWIN, *Secretary*.
- June 29-30, 1914—Idaho State Dental Society Meeting, held at Boise.—T. P. CARNES, Salmon, Idaho, *Secretary*.
- June 29-30, July 1-2, 1914—Joint Meeting of California State Dental Association and Southern California Association in the Yosemite Valley, Cal.—E. E. EVANS, Oakland, Cal., *Secretary*.
- June 30-July 1-2, 1914—Pennsylvania State Dental Society Meeting, Bellevue-Stratford Hotel, Philadelphia, Pa.—LUTHER M. WEAVER, Philadelphia, Pa., *Secretary*.
- July 1, 1914—Meeting of Idaho State Board of Dental Examiners, held in the State Capitol Building, Boise, Idaho.—A. A. JESSUP, *Secretary*.
- July 1-3, 1914—Florida State Dental Society Meeting, held at Atlantic Beach, Fla.—ALICE P. BUTLER, Gainesville, *Corresponding Secretary*.
- July 1-3, 1914—The Rhode Island Board of Registration in Dentistry will meet in State House, Providence, R. I.—ALBERT E. SEAL, Pawtucket, *Secretary*.
- July 1-3, 1914—Virginia State Dental Association Meeting, held at Old Point Comfort, Va.—C. B. GIFFORD, *Corresponding Secretary*.
- July 6, 1914—National Association of Dental Examiners, held at Rochester Hotel, Rochester, N. Y.—T. A. BROADBENT, 15 Washington Street, Chicago, Ill., *Secretary*.
- July 7, 1914—The next regular semi-annual meeting of the South Dakota Board of Dental Examiners will be held at Sioux Falls, So. Dak.—ARIS L. REVELL, *Secretary*.

- July 7-10, 1914—National Dental Association Meeting, held at Rochester, N. Y.—*HOMER C. BROWN, President; OTTO U. KING, Huntington, Ind., Secretary.*
- July 13-17, 1914—Montana State Board of Dental Examiners Meeting.—*G. A. CHEVIGNY, Butte, Secretary.*
- July 14-16, 1914—Wisconsin State Dental Society Meeting, held at Fond-du-Lac, Wis.—*O. G. KRAUSE, Wells Building, Milwaukee, Wis., Secretary.*
- July 15-18, 1914—New Jersey State Dental Association Meeting, held in North End Hotel, Ocean Grove, N. J.—*JOHN C. FORSYTH, Secretary.*
- July 23-25, 1914—First Annual Meeting of the Tri-State Dental Association, District of Columbia, Maryland and Virginia, held at Bay Shore Hotel, Buckroe Beach, Va.—*J. W. G. RAMSEY, Secretary.*
- August 3-8, 1914—England—Sixth International Dental Congress, London.
- August 6-8, 1914—Minnesota State Dental Association Meeting, held at Duluth.—*BENJAMIN SANDY, Syndicate Building, Minneapolis, Secretary.*
- August 12-14, 1914—West Virginia State Dental Society Meeting, Huntington, W. Va.—*A. C. PLANT, 802 Schmulbach Building, Wheeling, W. Va., Secretary.*
- August 23-29, 1914—Northern Indiana Dental Society, held at Culver, Indiana.—*O. A. VAN KIRKE, Kendalville, Secretary.*
- August 30-Sept. 1-9, 1914—Panama-Pacific Dental Congress, San Francisco, Cal.
- September 24-28, 1914—International Oral and Dental Hygiene Congress, Lyons, France.—*J. VICHOT, Secretary.*
- October 5, 1914—The Arizona State Board of Dental Examiners, held at Phoenix, Ariz.—*J. HARVEY BLAIN, Secretary.*
- January 28-30, 1915—Annual Meeting of American Institute Dental Teachers, Ann Arbor, Mich.—*J. F. BIDDLE, Ann Arbor, Mich., Secretary.*

INTERNATIONAL ORAL AND DENTAL HYGIENE CONGRESS

LYONS, SEPTEMBER 24-28, 1914

DEAR COLLEAGUE:

Hygiene in general, and oral hygiene in particular—are developing every day to a greater extent in relation with the scientific knowledge of this branch of the art of healing. We have thought that a congress of oral and dental hygiene ought to find a place among the numerous general hygiene congresses to be held in Lyons during the International Exhibition in 1914.

Preparations for this congress are being made under most favorable circumstances. Most distinguished scientists are giving their patronage. The very coincidence of this congress with the great urban exhibition organized by the city of Lyons cannot but be another element of success for our meeting, especially as a separate class has been set aside for dentistry.

We desire to appeal unto all workers in the field of diseases of the mouth and teeth, and have thought that on the ground of hygiene we could meet and exchange useful and profitable ideas both for ourselves and our patients, leaving aside entirely all matters of professional politics.

The congress will include active members and associate members (congressists' relatives). Dues are fixed at fifteen francs for active members and five francs for associates.

Numerous advantages will be reserved to members. The committee on organization is preparing festivities, official receptions, and any excursions that might be made. The transactions, papers, and discussions will be published after the congress and forwarded, free of charge, to members.

We do not believe it necessary to further insist upon the importance of this congress both from the general professional standpoint and from that of each

member. In the name of the Committee on Organization we beg to solicit your subscription as an active member.

We hope that you will, at your earliest possible convenience, forward your application for membership and the title of the papers you are keeping for the congress.

With confraternal greetings we beg to remain,

Sincerely yours,

DR. J. VICHOT, *General Secretary.*

DR. A. PONT, *President.*

Applications for membership, titles of papers, and dues (fifteen francs for active members and five francs for associates) should be forwarded to the General Secretary, Dr. J. Vichot, 6 rue de la Barre, Lyons.

P.S.—A Ladies' Committee will gladly receive our confrères' wives and will try to make their stay in Lyons during the congress as pleasant as possible.

PANAMA-PACIFIC DENTAL CONGRESS TO BE BIG FEATURE OF THE PANAMA-PACIFIC INTERNATIONAL EXPOSITION

DENTISTS OF WORLD WILL CONVENE IN SAN FRANCISCO IN 1915

More than 3,000 dentists from every part of the civilized world now are expected to attend the Panama-Pacific Dental Congress to be held in San Francisco during the Panama-Pacific International Exposition, which will be open from February 20 to December 4, 1915, inclusive.

The Dental Congress, which is being promoted by prominent dentists of the Pacific Coast, promises to be the largest gathering of dentists ever held and will be the motif for discussions and addresses on the latest advances in dentistry. The Congress will convene August 30, 1915, and will remain in session for ten days.

A feature of the Congress will be a great clinic, at which the latest methods of dental surgery, practised in every country of the world, will be demonstrated. It is expected that dentists of international reputation will attend the Congress, and the discussions of the thousands of delegates will mark an epoch in the history of dentistry.

The Dental Congress will be financed by a corporation known as the Pacific Dental Congress Commission of 1915. Active work toward securing international representation is in the hands of a committee of organizations.

A striking feature of the Congress will be the exhibits by dental manufacturers and dealers, which will include modern apparatus and appliances. As the Congress will meet in the new Municipal Auditorium, this array of interesting exhibits will be housed in the same building during the sessions of the Congress.

While these exhibits will be on display only during the Congress, there will be an extensive array of dental exhibits throughout the Exposition in the Palace of Liberal Arts, one of the eight main exhibit palaces. These will include apparatus and instruments used in dentistry, specimens of bridge and plate work, and the latest electrical devices used in dental surgery.

The modern application of electricity to dental uses, one of the most recent advances in dentistry, will receive important attention at the Dental Congress, and much of the latest apparatus on display will illustrate this subject.

A number of national and state dental societies and fraternities will meet with the Panama-Pacific Dental Congress, instead of holding their individual annual meetings. Among those that already have signified their intention of meeting with the Congress are the National Dental Association and the American Society of Orthodontists.